LAPIDARY

OR,

THE HISTORY OF PRETIOUS STONES:

With cautions for the undeceiving of all those that deal with *Pretious Stones.*

By THOMAS NICOLS,
sometimes of *Jesus-Colledge* in
CAMBRIDGE.

Ineſt ſua gratia parvis.

CAMBRIDGE:
Printed by THOMAS BUCK, Printer to the Univerſitie of *Cambridge.* 1652.

LAPIDARY:

OR,

THE HISTORY

OF

PRETIOUS STONES:

With Cautions for the understanding of
all such as deal with
Pretious Stones.

By THOMAS NICOLS,
Sometimes of St. John's-College in
CAMBRIDGE.

Printed by THOMAS BUCK, Printer to
the Univer. ity of Cambridge.

To the Right Worshipfull the Heads of the *Universitie* of CAMBRIDGE.

Right Worshipfull,

EVery thing according to its perfection is valuable, and the more glorious the more estimable. It is not the greatnesse of any thing that ought to purchase it esteem, nor must the smalnesse or littlenesse of a vertuous created substance decrease its worth: But great things as joyned with the glorie of their perfection, are so and no otherwise of great and high esteem; and little things are no otherwise valuable, then according to the glorious beauty of their perfections. Here, Right Worshipfull, I present you with things great and small, but with none without their vertues. They are created substances of the most enduring nature, which this our part of the sublunarie world doth contain: The glory

of those which shall here find beautified with externall grace, will feed your eyes with much pleasure in beholding: and their internall vertues, and the symboles whereby by them are discovered to us the glorious excellency of super-celestiall things, will in the right consideration of them no lesse feed your spirit with delight, then doth their externall beautie and perfection please your eye, when it doth behold their glory. Every one out of their common apprehensions of worth, and out of that mean perception which they have of things dignified above others with beauty and with glory, esteem them valuable: Gemms and Jewells are thus dignified with externall glory; and enricht with internall symbolical vertues. For this cause with those that have but mean and common apprehensions of their worth, they are esteemed. And for their symbolical resemblances of super-celestiall things, amongst the wisest of ancient times they have had upon them an high estimate of value and of worth. Surely, we live not in the most unknowing

ing times of the world; nay, never was this part of the world fuller of knowledge then now it is, wherein many are blest with excellent gifts and endowments by which they are enabled to enquire more throughly into the nature and causes of things, then ever. Amongst these who know the true nature of things, surely, nor gemms, nor jewells, nor any other vertuous thing shall want their due esteem. Nor with you, Right Worshipfull, I am sure, can that which is truly vertuous want its value.

It is a Philosophick axiome, *Inest sua gratia parvis*, I have here taken the pains to open the small cabinets of this excellencie, that I may discover the true vertues which are contained in many smal things and little creatures. This I have done, first, by a search and diligent enquiry into the causes and natures of Gemms, and into such qualities as may possibly from thence in them arise: Then by partly acquainting *Anselmus Boetius* with the *English* tongue: In the doing of which, I have endeavoured, according to what I find

Your Worships humble Servant

Tho. Nicols

To the courteous Reader.

COURTEOUS READER;

THat, that may be thy profit and pleasure I present thee with, though it hath been my labour and pains. I acknowledge it, as mine it is not a labour worthy thy commendations: Nevertheleſſe, as thou reapeſt profit by it, or conceiveſt pleaſure in it; ſo commend the pains of him that hath here laboured, and this labour of his painfull endeavours to thy friends.

Farewell.

T. N.

The Contents of the *Lapidary*, or Book of cautions.

In the generall Treatiſe are

1. *The generall definition of Stones.*
2. *Generall diviſion.*
3. *Manner of their generation.*
4. *Originall of Gemms according to Hermes and Plato.*
5. *The places of their births in generall.*
6. *The cauſes of perſpicuity and diaphanitie.*
7. *The materiall cauſe of Tranſparency.*
8. *Cauſe of the colour in ſtones.*
9. *The cauſe of hardneſſe.*
10. *Cauſe of the ponderouſneſſe of them.*
11. *Of the adulteration, and the way of its diſcovery.*
12. *The way of making pretious ſtones in their encloſures appeare fairer and larger then they truly are.*
13. *The uſe of foyls, tinctures, and bracteæ.*
14. *To help the ſoftneſſe of Gemms.*
15. *To colour Cryſtall, that it may reſemble gemms with colour.*
16. *The manner of taking away the colours of gemms naturally coloured.*
17. *Artificiall ſtones, the matter of them.*
18. *The way of poliſhing and engraving pretious ſtones.*
19. *The faculties of gemms and pretious ſtones.*
20. *Effects attributed to pretious ſtones which their natures are not capable of effecting.*

21. *Lap-*

21. *Langius his opinion concerning the generation of gemms and pretious ſtones.*
22. *Supernaturall effects of ſtones improperly ſo called.*
23. *The cauſes of all effects.*
24. *Rules to diſcern them.*
25. *Conditions to make effects truly naturall.*

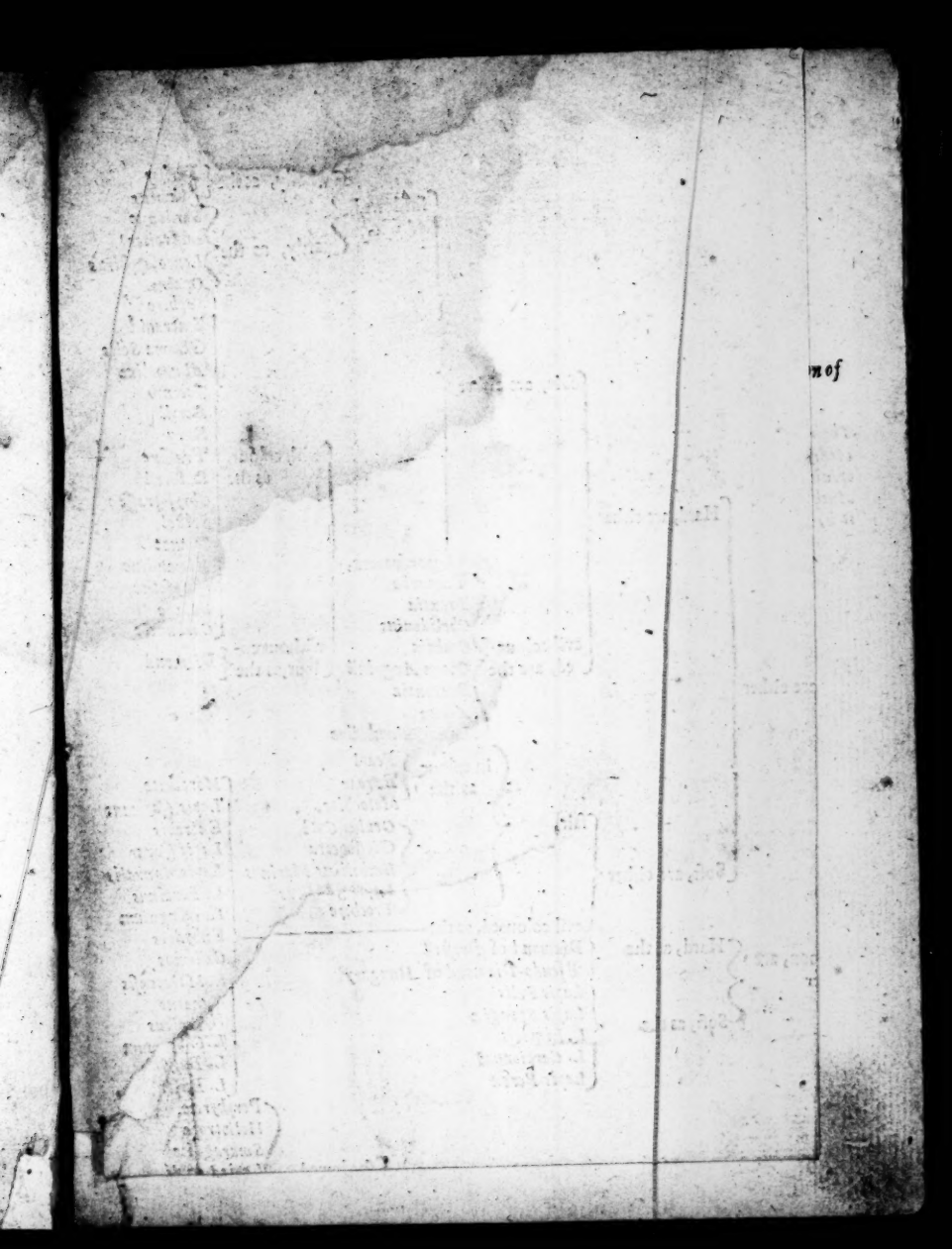
In the Book of Particulars, are contained theſe things:

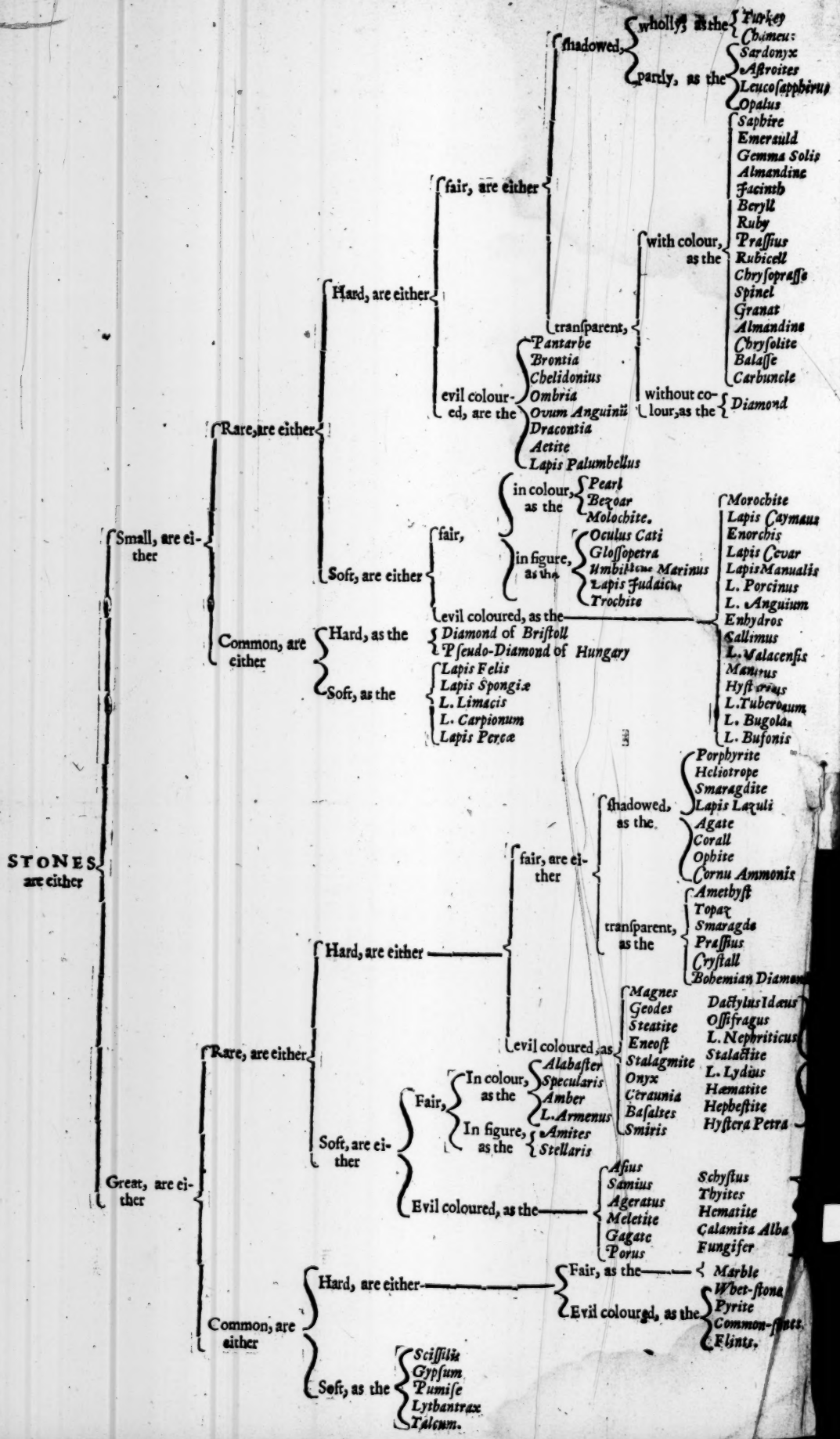
1. *The deſcription of the ſtone in the front of every Chapter.*
2. *The tinctures, foyls, and Bractea by which naturall gemms and pretious ſtones, that are either diaphanous or throughly tranſparent, are helpt in their glory, and ſet out in their luſtre.*
3. *The adulterations of pretious ſtones and gemms.*
4. *The names of them, by which they are diverſly known in ſeverall countreys by ſeverall Nations.*
5. *The ſpecies of every gemme and pretious ſtone, accordingly as divers Authours do render the diſcovery of them, that they may be known.*
6. *The places of the births of every kind and ſpecies of gemme and pretious ſtone.*
7. *The dignities and value of every pretious ſtone and gemme, according to divers Authours.*
8. *The properties of pretious ſtones and gemms.*
9. *The Phyſick uſes of them according as divers Authours have delivered them in their ſeverall writings.*

An Admonition or Advertiſement to the Reader.

Reader,

IF thou wouldeſt be free from many ſuperſtitions in the uſe of pretious ſtones, and undeceive thy ſelf as concerning the ſtrange vertues, powers, and faculties which by divers Authours in the end of every Chapter they are reported and related to be endued withall, though contrary to what their own natures are or can be capable of: Firſt, read the Generall part of this Hiſtorie, for in it is a diſcovery of Satanick ſubtilties, and of the ſuperſtitious uſe of ſtones, whereby at unawares many good men have been, and are ſtill enſnared. Take therefore this well-wiſht caution to thee for thy ſecurity.




STONES are either
Small, are either
Great, are either
Rare, are either
Common, are either
Hard, are either
Soft, are either
Hard, as the
Soft, as the
Diamond of Briſtoll
Pſeudo-Diamond of Hungary
Lapis Felis
Lapis Spongiæ
L. Limacis
L. Carpionum
Lapis Percæ
fair, are either
evil coloured, are the
Pantarbe
Brontia
Chelidonius
Ombria
Ovum Anguinii
Dracontia
Aetite
Lapis Palumbellus
shadowed, wholly, as the
Turkey
Chameu:
Sardonyx
partly, as the
Aſtroites
Leucoſapphirus
Opalus
transparent, with colour, as the
Saphire
Emerauld
Gemma Solis
Almandine
Jacinth
Beryll
Ruby
Praſſius
Rubicell
Chryſopraſſe
Spinel
Granat
Almandine
Chryſolite
Balaſſe
Carbuncle
without colour, as the
Diamond
in colour, as the
Pearl
Bezoar
Molochite.
in figure, as the
Oculus Cati
Gloſſopetra
Umbilicus Marinus
Lapis Judaicus
Trochite
evil coloured, as the
Morochite
Lapis Caymaus
Enorchis
Lapis Cevar
Lapis Manualis
L. Porcinus
L. Anguium
Enhydros
Callimus
L. Malacenſis
Manitus
Hyſtricus
L. Tuberoſum
L. Bugolas
L. Bufonis
Porphyrite
Heliotrope
Smaragdite
Lapis Lazuli
Agate
Corall
Ophite
Cornu Ammonis
Amethyſt
Topaz
Smaragde
Praſſius
Cryſtall
Bohemian Diamond
Magnes
Geodes
Steatite
Eneoſt
Stalagmite
Onyx
Ceraunia
Baſaltes
Smiris
Dactylus Idæus
Oſſifragus
L. Nephriticus
Stalactite
L. Lydius
Hæmatite
Hepheſtite
Hyſtera Petra
Alabaſter
Specularis
Amber
L. Armenus
Amites
Stellaris
Aſius
Samius
Ageratus
Meletite
Gagate
Porus
Schyſtus
Thyites
Hematite
Calamita Alba
Fungifer
Marble
Whet-ſtone
Pyrite
Common-ſtone
Flints.
Sciſſilis
Gypſum
Pumiſe
Lythantrax
Talcum.

Of Pretious ſtones or Gemms in generall.

A Stone is an hard, mixt, inanimate, ſolid, inductile body, which cannot be diſſolved in water, concrete by nature of ſimple earth, without many alterations, as of its chief and moſt conſpicuous matter. Stones generally are ſolid ornaments ordained of God for the bedecking of the fabrick of the world. The celeſtiall houſes have the Corner-ſtone of heaven for their ſupport: and here on earth alſo our ſumptuous edifices and glorious temples have their corner ſtones, without the which they cannot be upheld. Stones are the Almighties bleſſings, they are members of the world which do adde perfection to it, and were theſe ſolid members wanting, the world would be diſmembred. They do as it were poize or ballance the centre of the world, and to the whole they do equally proportion all its parts. As the wiſe diſpoſer of all things had well mixt them with their fellow creatures, ſo they made up the worlds centre: But no ſooner are they forced from this good order, but ſtraight appeareth another Babel, they do produce confuſion. They are no ſooner forced to contradict their own natures in the aſcents

Definition of a Stone.

wholly, as the { Turkey, Chameus }

partly, as the { Sardonyx, Astroites, Leucosapphirus, Opalus }

{ Saphire, Emerauld, Gemma Solis, Almandine }

Of Pretious ſtones or Gemms in generall.

A Stone is an hard, mixt, inanimate, ſolid, inductile body, which cannot be diſſolved in water, concrete by nature of ſimple earth, without many alterations, as of its chief and moſt conſpicuous matter. Stones generally are ſolid ornaments ordained of God for the bedecking of the fabrick of the world. The celeſtiall houſes have the Corner-ſtone of heaven for their ſupport: and here on earth alſo our ſumptuous edifices and glorious temples have their corner ſtones, without the which they cannot be upheld. Stones are the Almighties bleſſings, they are members of the world which do adde perfection to it, and were theſe ſolid members wanting, the world would be diſmembred. They do as it were poize or ballance the centre of the world, and to the whole they do equally proportion all its parts. As the wiſe diſpoſer of all things had well mixt them with their fellow creatures, ſo they made up the worlds centre: But no ſooner are they forced from this good order, but ſtraight appeareth another Babel, they do produce confuſion. They are no ſooner forced to contradict their own natures in the aſcents

Definition of a Stone.

of their graduall irregularities to heaven, but ſtraight they do cauſe their prepoſterous builders to be ſmitten in their tongues, to be confounded in their languages, and to be diſperſt abroad as ſtrange nations, who cannot underſtand the one the others ſpeech. They are the rock on which the earths tabernacles, domicils, and temples are all founded, firmed, and ſteadied; and the firmament of it, and them, of all, is the Rock of heaven, who hath ſo *laid the foundations of the earth that it ſhall never be moved.* They (as the opinion of ſome is) have vegetative ſouls, or lapidifick ſpirits infuſed into them from above, by which they live and draw the likeneſſe of their ſubſtance, their lapidifick juyce, their proper nouriſhment, for their ſuſtentation, for the preſervation of their being, and for their further growth and increaſe of their own proper ſubſtantiall *moles*, maſſe, or lump. Herbs draw their fructifying juyce from the circumjacent earth by thready roots, thereby to ſap their bodies and their branches, that ſo in their due ſeaſon they may ſend forth buds, bloſſoms, leaves, and fruits; and as theſe are diverſly differenced according to their magnitude, fruits, forms, colours, qualities, and place wherein they grow: ſo alſo ſtones have their ſeverall diviſions, according to their magnitude, matter, forms, colours, tranſparency, opacity, ſemitranſparency, and mixt forms. Other diviſions they do admit of in reſpect of their native ſoyls, and the things to which they do adhere, and in which they grow. Nevertheleſſe, there are two generall heads to which all the diviſions may be reduced; which are as follow.

Their life according to the opinion of ſome Authors, what it is.

The

The generall diviſion of ſtones.

STones are either 1. Common ſtones; or
2. Stones of eſteem.

The Common ſtones are either very great, bigg, and formleſſe lumps; or elſe they are in very great plenty; The moſt of theſe kinds are generally well known. The ſtones of eſteem are very pretious and ſtones of great value, being commended to us in Holy Writ as the emblems of glory, integritie, and puritie. Of theſe ſome are of greater eſteem, ſome of leſſe: thoſe of leſſe eſteem receive their denominations from the creatures in which they are generated; as *Chelidonius* is ſo called of *chelidon* a ſwallow; *Lapis Palumbellarum*, and *Alectorius* of the birds in which they are found. *Lapis Percæ* from the fiſh called a perch, in which it is generated. The *Margarite* from the fiſh in which it is generated: and *Unions* are ſo called, becauſe they are found *ſeparatim* or ſingle. The *Bezar* from the creature in which it is found. There are ſome ſtones of leſſe eſteem like unto plants, as *Corall* and *Coralline*. Others of a combuſtible ſubſtance, and eaſily ſet on fire, as *Succinum*, and the *Gagate*. Others have a Mathematick form, and are round like an egge, as *ovum Anguinum*, *Geodes*, *Ætites*. Others have a Mathematick angular form, as *Cryſtallus*, *Baſaltes*, *Iris*. And others have a Mathematick hemiſpherick form as *Ombria*, *Crepaudina*.

Thoſe of great eſteem are very pretious, and of great value: of which ſort are theſe: The *Ruby*, the *Carbuncle*, ſo called from their fiery red colour. The *Facinct*, a tranſparent ſtone like a flame of fire. The

Chryſolite, a tranſparent ſtone of a gold colour. The *Cryſopraſius*, a tranſparent ſtone of the ſplendour of gold with the greenneſſe of a leek. The *Smaragde* and the *Praſius*, two tranſparent green ſtones. The *Saphire* a tranſparent ſtone of a sky colour. The *Beryll*, a tranſparent ſtone of a ſea-green. The *Amethyſt*, a traſparent ſtone of a peach-bloom colour. The *Diamond*, a diaphanous gemm. The *Sardius*, *Sardonix*, *Chalcedonie*, and *Leucoſaphirus*, which are all precious ſtones partly tranſparent. The *Turkey* ſtone, a gemm void of all tranſparencie, of a beautifull skie-colour. The *Chamehuia*, the *Agate*, the *Heliotrope*, very fair non-tranſparent ſtones.

All which in the manner of their generation differ much from other vegetatives, and from other creatures which are endued with ſenſitive ſouls, in the manner of their generation. As for other vegetatives, ſuch as are plants, they are produced by the ſowing of ſeed; which being caſt into the ground, firſt dies, then receiveth a new body, and ſo groweth in its perfection by degrees, ſhooting it ſelf forth in a large proportion, and in altitude above the ſuperficies of the earth. As for creatures enduced with ſenſitive ſouls, they generate by copulation, coition, or mixture of ſeed: but farre otherwiſe is the manner of the generation of pretious ſtones; as in this appeareth.

The

The manner of the generation of ſtones.

THeſe creatures are generated of an humour which containeth in it ſelf pureſt terreſtriall portions reſolved in *minimas partes* by the operation and elaboration of intelligences, as Langius and others think, or by the powerfull working of lapidifick ſpirits, as appeareth by what Boetius ſpeaketh of their generation, in his book *de naturis Gemmarum in genere*. Being thus generated, they are uſually by degrees augmented by the addition of new matter, and by the acquiſition of new humour, as will appear in the generation of thoſe ſtones which have their originall out of an humour called a Radix, or out of a confuſed matter which is in lieu of a Radix as the Chryſtall and Amethiſt. Others are generated by elaborations after the ſame manner, but have their originals in a Theca or Matrix, as the *Rubinus in Palatio*. The Margarites and Unions differ in the manner of their generation, from the generating of other Gemms or pretious ſtones, for theſe are generated of the pearly drops of chryſtall morning dew, drunk in by the ſhell-fiſh called Scallops, and Cheripo: and indurated after the ſame manner that the Bezar is generated in the beaſt Bezar, or that ſtones are generated in the kidneys of men: and as theſe ſtones by the addition of new matter, are increaſed; ſo likewiſe the Unions are increaſt by the new addition of freſh draughts of pureſt chryſtall dew, even by freſh ſupplies of that pureſt reſtorative liquour, taken in as the mornings draughts to ſerene and chearfull

Generation of Unions.

dayes. Tranſparent Diaphanous Gemmes are all generated of a humour which containeth in its ſelf moſt pure ſubtile earth, and by reaſon of its exquiſite ſubtility, it can by no means hinder the diaphanity of the water. So Anſelmus Boetius.

The uſe of the knowledge of Gemms.

The knowledge of Gemms is an ornament to Princes; a mean by which Divines are oft-times inſtructed in the knowledge of ſpirituall things; for by theſe, *He that hath the key of David and openeth and no man ſhutteth*, doth often unlock the intricate ſenſe, hidden meaning, and deep myſteries of the ſacred truths of his holy word; for this cauſe in ſacred writ oft times we have many heavenly things emblematized unto us, under the types and figures of Gemms or pretious ſtones; in this kind we may find very frequent mention made of them both in the old and new Teſtament, by Moſes in the Law, by S^t. John in the Revelation: the depths alſo of the myſteries of other writers, who under the titles and figures of Gemms have comprehended many excellent allegories, by the true knowledge of pretious ſtones will eaſily be found out: ſo that theſe bleſſings which we do enjoy by the true knowledge of them; through the goodneſſe of the Almighty, are none of the leaſt bleſſings which we do receive at his hands. What creatures here on earth, have we, that are endued with ſo much ſinceritie, puritie, claritie and ſplendour, that are ſo fit to reſemble heavenly things by as theſe? ſo great are their ſparkling glory, as that we may well compare them to the expanſe which divides the upper and the neither waters, and is beſpangled with multitudes of glo-

rious

rious twinckling ſtarres. Aaron being clad in his pectorall and guarded with files of theſe, had on his breaſt the emblems of puritie, and of glory, of light, of perfection, of truth, of juſtice. Joſephus *lib.* 3. *Antiq. Judaic. c.* 12. teſtifieth that the Hebrews, were wont to ſet the twelve ſtones of the ephod in their banners, hoping that for this cauſe God would be more mercifull to them in their warres; and as it were by theſe twelve ſtones putting him in mind of their twelve tribes, and imploring his mercie, and craving his help for the deliverance of their tribes out of the hands of their enemies. The knowledge of them will not onely be an ornament to Princes, a mean of knowledge to Divines, and thoſe that are ſtudious of Divinity; but it will be profitable and pleaſant to all that deſire truly to meditate the wonderfull workings of God in his creatures. *Hiſtory.*

Originall of Gemms according to Hermes and Plato.

HErmes Triſmegiſtus and Plato have determined of the originall of Gemms and of other things after this manner: Both ſay that there is a certain common virtue and vivifying ſpirit, infuſed from heaven and from the ſtarres into the whole world, and every part of it, which ſome call, *animam mundi*; but Plato *mentem divinam*, which doth perpetually long by its naturall power *novâ formâ veſtiri*; and which doth ſo continually diſpoſe its power in the matter of all things, *ut materiam quan-*

quantumvis vilem & putridam, bene tamen diſpoſitam in actum perfectiſsimæ etiam formæ reducat. Others ſay, that as there are varieties of matter in the world, ſome more pure ſome leſſe pure, ſome more noble ſome leſſe noble, ſome more excellent ſome leſſe excellent; ſo alſo there are variety of ſpirits which do inhabite the world, ſome more glorious, ſome leſſe, ſome delighting in this colour ſome in that; ſome in much tranſparency, others in opake dark and ſhady matters; and according to the various matter of their delight, they will form to themſelves habitacles or domicils, which ſhall receive their tincture from themſelves, as from their inhabitants; and probably by reaſon of this opinion of Langius and others concerning the inhabitation of intelligences in precious ſtones, there may be ſome ri'ſt for thoſe wonderfull faculties and powers that many Authours ſay Gemms are endued withall, though contrary to what creatures naturally can poſſibly be capable of. Many are of the like opinion concerning the generation of metals: and there are that ſay by reaſon of the great affinity that there is betwixt metallick ſpirits and Gemms, or betwixt the ſpirits that inhabite Gemms and the Gemms they inhabite, there is oft or may be made a tranſmutation of metals into Gemms; *ſtibium enim & plumbum in Jacinthi formam, & minium in formam Smaragdi tranſmutatur; quod profectò non fieret, niſi magna cognatio ſpiritûs metallici cum Gemmis eſſet.* So Boetius *l.* 1. *p.* 15.

Of

Of the places of the birth of Gemms in generall.

THe climates fitteſt for the production of ſtones of excellent beauty are ſuch, ſaith Boetius, as do lie neareſt the Tropicks; and therefore have the ſunne ever neare them. They may be produced in any climate, but the more noble kind of gemms, and pretious ſtones, are in their excellency plentifully to be found in the Regions of the orientall Indies, and that without doubt, becauſe it lyeth neareſt the Tropick, and ſo hath the ſunne ever neare it, *illiúsq; aſtu fruantur, ſine quo è terra exhalationes quæ ad gemmarum nobilium propagationem, & generationem copioſè requiruntur, produci non poſſunt.* Boetius *p.* 13.

The cauſes of Perſpicuitie and Diaphanitie in them.

IT is the opinion of learned enquirers into the ſecrets of nature, that the plenty of chryſtall ſucculencies in the matter of Gemms, are the onely cauſes of their perſpicuity and diaphanitie, as that without which they do ſuppoſe there can be no perſpicuous or diaphanous bodies at all. But Boetius is of a farre different opinion, as appeareth by this which he ſaith. *l.* 1. *p.* 21. *Hi maximè falluntur, quia non ſolùm aqua, ſed & aer diaphanus eſt, licèt atomis ſit pleniſſimus*, that is, Theſe are much deceived, for not onely the water, but alſo the aire is diaphanous,

though it be full of atomes, and the fire doth much excell them both in diaphanitie; hence he ſaith *copia aquæ non eſt diaphanitatis cauſa, ſed aliud quiddam,* to wit, the exact union of the earth, reſolved *in minimas particulas*, and ſo plainly and exquiſitely continued, that the body conſtituted of it, can by no means be diſcerned to have any pores or atomes in it. Continuitie alone he ſaith is the cauſe of all diaphanitie, and that becauſe the ſight can in no wiſe be terminated in it, unleſſe it hath ſome contingent accident in its averſe part from the light or ſunne; as ſome ſhadow, which ſo hindereth this part from being enlightened by the circumferent light, that the contingent or accidentall obſcuritie cannot but be perceived; this may be experienced in a looking-glaſſe. Flaws, cracks, or fiſſures in glaſſe or chryſtalls, do much hinder their perſpicuitie and diaphanity, whether they be internall or externall; becauſe they having every one their diſtinct ſuperficies, do every one of them cauſe a divers reflection of the light, which diverſitie of reflections procureth a certain kind of confuſion, by which the diaphanitie of the body, otherwiſe diaphanous, is hindred.

The Materiall cauſe of tranſparencie.

THe materiall cauſe of this tranſparencie in gemms, is a ſpecies of ſalt, which is a tranſparent terreſtriall matter diluted with water, which tranſparent ſalinous ſubſtance, doth by its acrimony penetrate, pierce, & cut the earth into moſt exquiſite, ſubtil, ſmalleſt portions. Thus it doth make the earth

earth fit for diaphanitie, and worketh out the water, which is as it were its *vehiculum*, and at the ſame time by degrees uniting it ſelf to theſe exqiſite portions of earth, it doth grow together with them into a diaphanous gemme. So Boetius.

Thoſe gemms which do contain moſt ſalinous matter in them, are ſofter and more diaphanous, then other gemms, as the *Cryſtall*, *Beryll*, *Iris*, *Citrinus*, and the like.

The hardeſt gemms have leaſt ſalt in them, and are leſſe diaphanous, as the *Diamond*, *qui plùs micat quàm tranſparet.*

The cauſe of the colour in pretious ſtones.

AS there are divers opinions concerning the diaphanity of gemms, ſo there are likewiſe concerning the tincture and colour of gemms, as will appear by what followeth. The colour which may be perceived in gemms, is either diaphanous, I mean tranſparent, or an opake, obſcure, and ſhadowed colour. This doth receive in the light, and not again tranſmit it; the other doth again tranſmit (ſaith Boetius) or ſend forth the light that it doth receive in: but abſolute or perfect diaphanity and tranſparencie, admitteth of no colour at all: for whereſoever there is but any tincture of colour, the tranſparencie or diaphanitie muſt needs be imperfect, becauſe the light ſeemeth to be affected and altered by the colour, and therefore cannot be terminated in its own proper colour, or rather perſpicuity of the gemm, but is terminated in ſome ſtrange, opake, dark colour. *Anſel. Boet. l.* 1.23.

In gemms or pretious ſtones there is to be found a reall colour, and an apparent colour. The reall colour alwayes remains though the light be abſent. The diverſitie of apparent colours do remain no longer then whileſt the light is preſent.

In perfectly tranſparent or perſpicuous gemms or ſtones, colours have their originall from the refraction or reflection of the light, which diverſity of reflection in Cryſtalls, is cauſed by the multiplicitie of their ſuperficies. This will appear in a triangular, or an hexagonall Cryſtall, which is abſolutely diaphanous, hath no colour at all in it, and receiveth the light *rectis lineis*, and doth again tranſmit it *rectis lineis*; yet by reaſon of the refraction and reflection of the light upon the multiplicitie of ſuperficies, it doth repreſent to our view various colours: This we find true by experience, ſaith Boetius, *Licèt intellectus id non capiat*, therefore *à ſenſu recedendum non eſt*, that is, though we can give no reaſon why pure, ſimple, innocent light, in a diaphanous exactly tranſparent body, deprived of all colour, and the leaſt tincture of any colour, ſhould yet notwithſtanding beget divers colours.

There are divers opinions concerning the originalls of the colours in gemms, ſtones, earths, trees, plants, and flowers. Some think the *ſpecies ſalis* to be the *cauſa coloris*, and will have the *ſalem armoniacum* the cauſe, which is very plentifull in mineralls, metalls, and in the earth, to produce the various colours in plants, flowers, gemms, and ſtones, and in all other things. And that which they call *ſalem armoniacum naturæ, eſt ſal quoddam ſpirituale vivificum, quod vino ſublima-*

Sal armoniacum naturæ quid.

ſublimato junctum illo priùs aſcendit. This is thought by ſome to be the *primum movens* in the generation of things; and the conſerving balſame of every thing, and that which doth adorn them with the beauty of their various colours. The plenty of this ſalt which is found in every thing, and may be extracted out of every thing, doth cauſe this opinion concerning the colours in gemms and ſtones. Another reaſon which is given for this, is this: becauſe it being collected and diſtilled, doth of it ſelf produce all kinds of colours. Some are of opinion that the various exhalations are the cauſe of colours. Others ſay that they are produced by the various commixtion of the elements, and by their concoction. Others, that *Colores à primis qualitatibus in materiam derivantur.* Others ſay that all colours do ariſe from the various commixtion of the two extreme colours, that is, of white and black, *lucis & umbræ*, as appeareth in the *iris* or rainbow, wherein out of light and darkneſſe mixt, various colours do ariſe. Boetius is of opinion that theſe are no cauſes of colours in things, but that all colours are certain extrinſecall ornaments given of God to the creatures for diſtinction, and that they are produced out of their own proper ſeminary, out of which alſo he thinketh that their extrinſecall form ariſeth. And that *ſal armoniacum* which Quercetan calleth *balſamum naturæ*, he ſaith is their *vehiculum*.

Various opinions concerning the originall of colours in things.

For the moſt part all theſe ſtones and gemms which have a peculiar and proper form, have a *ſeminarium & principium coloris in materia ex qua formantur.* Boetius. *p.* 25. *l.* 1.

Varietie of colours are produced by the mixture of colours.

The ſtones which have no determined form or figure he ſaith have their tinctures from exhalations as their remote cauſe, and from the minerall ſpirits, and Sal Armoniack as their propinque and neareſt cauſe. The *primarii colores*, or eſpeciall colours which ariſe not from the commixtion of other colours are theſe.

Boetius *de naturis gemmarum in genere.*

White, black, blue or skie colour, yellow, red, *miniatus color*, or vermilion or fiery red. Almoſt all kinds of colours are cauſed by the various mixture of theſe colours. But in their own originalls they are not mixt with others. Boetius.

By the Mixture of white and black is produced the colour of aſhes; the more white there is, the more bright the colour is; the leſſe, the more obſcure.

Mix skie colour and yellow and it will produce a green colour.

Mix red and skie colour and you will have a violet colour.

Mix a miniated colour or a fierie red, and a red together, and you will have a purple colour.

Mix a white and a red and you will have a roſe colour.

Mix a white and skie colour and you will have a milkie colour.

Mix a miniated colour, or a fierie red and yellow red together with a white, and you ſhall have a *helvus* or *gilvus*, that is, a carnation or fleſh colour.

Mix yellow and green and you will have an orenge or ſtraw colour.

Mix a miniated colour, or a ſimple red, or a vermilion, and a yellow, and a red, and a white together,

ther, and you will have an orenge colour, ſtraw colour, or a wax colour.

Mix white and orenge, or ſtraw colour, and you will have a pale colour.

Mix vermilion and yellow and you will have a yelk colour.

Mix green yellow and white, and you will have a box colour, or pale colour.

Mix red yellow and vermilion, and you will have a ſaffron or gold colour; or a brown or ſwarth colour, or a puke colour, ſad ruſſet or tawney, according to the various proportion of every colour.

Thus have we ſeen the various judgements of divers Authours, concerning the originall of divers colours, in gemms or pretious ſtones, and in plants and other creatures: ſome imputing the originall of the varietie of beauty in colour to the *balſamum naturæ*, or to the *Sal armoniacum* contained in the ſubſtantiall matter of all things: others making mineralll exhalations the cauſe of colours in them: others the elaboration of the firſt qualities upon the matter of their ſubſtance. Some imputing it to the various commixtion of two extremities, to wit of black and white, of darkneſſe and light; But how can this be, ſeeing darkneſſe is no colour, but a privation of colour; and a very forgetfulneſſe of all thoſe colours which by light we may diſcover; for in its preſence we are deprived of the remarkable views of thoſe viſible qualities of various colours, by which we do on earth diſtinguiſh things. Then as for light we ſee that it is guilty of no tincture in it ſelf, and by how much it hath more or leſſe of colour

lour accidentall, ſo much it doth fall ſhort of the perfection of its light. Light and darkneſſe are at continuall ſtrife, the preſence of the one cauſeth the abſence of the other. No ſooner did that bleſſed Spirit of light move upon the face of the waters of the great deep, but ſtraight darkneſſe affrighted with the all-awfull preſence of its glory fled away. No ſooner doth the ſunne ariſe to runne its courſe, gloriouſly ſetting forth from under its pavilion, but ſtraight the amazed ſhades of darkeſt nights flee all away. No ſooner doth the Sunne of Righteouſneſſe begin to dart his beams of glory into the horrid darkneſſe of mans ſinfull heart, but ſtraight this powerfull word, moving on the ſurface of this centre, begets a new creation, and ſets up there a glory, by which through the qualities of earthly colours we may diſcover the excellency of heavenly vertues. But the darkneſſe of the heart all amazed at this ſudden powerfull motion in this centre, ſtraight forſakes its ſtation, and fearfully fleeing leaves its habitation to the light. If then there be ſuch a diſtance betwixt light and darkneſſe, that nothing may interpoſe for agreement, how ſhall we think they ſhould ever joyn by mixture in ſubſtantiall matters to produce varietie of colours. Since therefore there can be no agreement betwixt theſe two extremes, to make for the effecting of ſuch diſtinguiſhing qualities as are colours; then if from them they do proceed, they muſt be the ſad effects of their contrary operations: ſad I ſay, becauſe light being oppreſſed by darkneſſe wains; and which is our grief, darkneſſe can nothing be impayred, there being

being nothing worſe then it. As it is darkneſſe it cannot be impayred, but as it is darkneſſe extended, it may be, and is, and ſhall be coarctated.

The cauſe of hardneſſe in gemms.

THe *durities* and hardneſſe in gemms is cauſed by the exact and perfect union of their pure well compacted matter, which is freed of its moiſture by the power of heat, exhaling or extracting it; or of cold, compelling it by compreſſion. Aire maketh gemms friable, and ſubject to be broken with every touch: water doth poſſeſſe them with a *mollities*, ſoftneſſe and thinneſſe of texture, and a tenderneſſe of parts,

The hardeſt of all other gemms is the *Adamant*, then the *Topaz*, then the orientall *Chryſſolite*; next the *Saphire*, *Granate*, *Jacinth*, then the *Smiris*, then the *Jaſper*, *Achate*, *Baſaltes*.

The ſofteſt of all other gemms is the *Opalus*.

Perſpicuitie in gemms is a ſigne of their excellent union, and of the well compactednesſe of their matter; and from their well compactednesſe and exquiſite union proceedeth their *durities* or hardneſſe, which hardneſſe doth beget in all ſtones a fitneſſe for politure, and an irreſiſtible power againſt fire; As doth appear by the *Adamant*, which becauſe of its hardneſſe can ſcarce be injured by the power of the fierceſt fire; and for this cauſe it may be uſed ſymbolically as a ſignification of conſtancy. The Bohemian *Granate* by reaſon of its exquiſite *durities* doth likewiſe ſuffer little injury by fire.

The cauſe of the ponderouſneſſe of Gemms.

AS hardneſſe in gemms is ſaid to proceed from their exact union, ſo likewiſe this is ſome cauſe of their heavineſſe & weightineſſe: for thoſe gemms which are not well compacted and united, are light, porous, and full of levitie. Another cauſe of the ponderoſitie of gemms, is a Mercuriall ſubſtance which is contained in them; of theſe ſorts of gemms are all thoſe that do conſiſt of a mineral matter. And for this cauſe factitious gemms which are made of metalls, are heavier then any naturall gemms.

Of the adulteration of Gemms, and their diſcoverie.

ANy throughly tranſparent tinctured gemm what ever, may be adulterated by two Saphires, or with two Cryſtalls, having a foyl betwixt them. But ſuch duplicated gemms, which are tinctured either with a foyl of Maſtick, or with other coloured foyls in their intermediate ſpace, are thus ordinarily and uſually diſcerned by Jewellers: They will take the gemm and put it upon their thumb nail, and then direct their ſight betwixt the plain of the gemm and of their nail; and if the upper part of the gemm be white, and no colour be added (which lying hid under the ſides of the *ciſta* can there be perceived) then the upper part of the gemm will plainly appear white as it is, and ſo it will diſcover it ſelf to be an adulterated gemm in ſtead of the naturall one. This is a very eaſie way to diſcover factitious

tious gemms from naturall ones. But thoſe factitious gemms which conſiſt of many angles fitted for this purpoſe, by various ſections, hollowings, and excavations, cannot ſo eaſily be perceived, becauſe the reflections from the angles, do give tincture from the foyl in every part of the ſuperficies of the gemm. Another kind of ingenious fraud there is, by which gemms are adulterated, and that is when as cunning Artiſts do excavate a gemm, as a white Saphire, or a Cryſtall, in the lower part of it with a very ſmall *foramen*, and then infuſe into it a drop of ſome transparent liquour, which being artificially done, will very excellently diffuſe its colour through the bodie of the whole gemm: Thus the idea's of true Rubies, Saphires, Smaragdes are produc'd. There is another kind of way of ſubtill fraud in gemms, when as cunning ſophiſticatours do macerate gemms in coloured or tinctured waters, or ſo tincture them in fire, or by any other means, that the tincture or colour may enter the body of the gemm. Theſe frauds can no otherwiſe be diſcovered, but by taking the gemms out of their *ciſtis*, encloſures, or ſettings, and ſo taking a naked view of them with full ſight. As for other gemms which are diſſembled with tinctured glaſſe, theſe for the moſt part ſeem to have a *pellicula* or little film in their ſuperficies, as if they were anointed with oyl, which is never to be found in true gemms. There are factitious gemms made of Cryſtall, and of flints, and lead, which will be harder then the common glaſſe, and tranſparent as Cryſtal; in the making of which, to tincture them, cunning artiſts are wont to adde metalls to it, or tinctures, or

colours of metalls, and thus they being committed to the fire, by the operation of the heat upon them, will be produced a gemme scarcely to be discerned from the true genum, save onely by the atomes in the middle of their bodie, and by those small *bullæ* which are often caused in them by the unequall working of the fire upon their matter, or by the extreme vehemencie of its heat. Of these kinds of factitious gemms there are some so perfect, and free from the small *bullæ* and atomes, as that they can no wayes be discerned from the true gemms but by the use of the file; for these may be filed, the true ones cannot, except onely the Topaz and Smaragde: and by their gravitie, weight, and ponderosity; for these factitious stones are much heavier then the true, as consisting of lead and metalls, which are very ponderous and weighty: and by their pining, dead, fading look, which if they be long beheld, do afford no pleasure to the eye by feeding it; whereas in true gemms there is alwayes a lively splendour, which by reason of the reflection of the severall tables or sides of the superficies, gives it self forth with the more sparkling delight. Another way of adulteration of gemms there is, very subtill, and more excellent then any of the former, which is this, Cunning Chymists will make a lapidifick water of mineralls, and then poure of it into waxen forms, which forms they will immerge for some time in an indurative water, and thus produce a gemm not unlike to the true. *Vide Anselm. Boetium lib.* 1. *c. de adulter. gem.*

Use of the file in the triall of gemms.

The

The way of making pretious ſtones in their enclosures appear fairer and larger then they truly are.

THere are other ſubtil frauds about gemms, by which Jewellers can make them ſeem much larger then they are: As if the inferiour part of the gemm which is included in the *ciſtus* or ſetting, doth conſiſt of many ſuperficies, they will render the gemm greater to ſight then really and truly it is, by reaſon of their manifold reflections. Again, if there be any intermediate aire betwixt the ſuperficies of the gemm, and its *bractea* or foyl, it will according to its proportion, render the gemm greater then otherwiſe it is; if it be much, it will render it much bigger, becauſe (ſaith Boetius) here the aire doth *ſubire vices corporis, ac gemmas tanto craſſiores, quanto ipſe eſt, videri facit.* Again, if pure untinctured glaſſe or Cryſtall, without any glutinoſity, be placed in ſuch an intermediate ſpace, it will even as the intermediate aire, render the gemm much greater then it is. If alſo colour be added in the conjunction of ſtones, with a *lacryma* or *guttula*, or a drop of maſtick, it will do the ſame: or if the glaſſe or Cryſtall be tinctured or coloured with the colour of the gemm, it will not onely render it greater, but with more tincture alſo.

Of the foyls tinctures or bracteæ.

Uſe of foyls tinctures and bracteæ.

THe uſe of foyls tinctures and *bracteæ* are to adminiſter beauty to the gemme; for this purpoſe Jewellers are wont to illine or anoint the *inferior ſuperficies* of the gemm with a perſpicuous colour; at other times to place under them a *bractea* or foyl; or a ſplendent tincture, which is made after this manner. Take one *guttula* or grain of maſtick upon the point of an iron, heat it in the fire till it begin to melt, then ſeparate the dark obſcure part of it from its perſpicuous part, by the preſſure of your finger; then caſt away that, and uſe this. To adde beauty and luſtre of tincture to ſtones, ſome are wont to uſe this penetrating water.

Aqua gemmas penetrans.

Aqua gemmas penetrans fit ex Terebinthina & aqua vitæ, quibus adde colorem ex metallis extractum; diſſolvatur in aqua urinæ ſtillatitia, & color perſpicuus extrahatur per alembicum; & ſic fit color. In this water macerate your cryſtall for ſome hours, and if the water be firſt warmed, the cryſtall will becauſe of its ſoftneſſe eaſily receive in the tincture. For the making of this water to produce a red colour, *crocus Martis* muſt be uſed: to produce a green colour, *ærugo:* to produce a skie colour, *Luna, Sal armoniack,* and *aqua fortis:* to produce a blue colour *ærugo,* and *lapis lazuli.* Boetius *p.* 32.

To help the ſoftneſſe of gemms.

THe *mollities* of gemms, or their ſoftneſſe, which is contracted by continuance of time, may be thus helpt. Make a *ciſta*, or a ſetting of paſte made of fine floure, then infold the gemm in two or three papers; and then cover it over with its papers on every ſide, in the ſetting of paſte, with *crocus Martis*; then cloſe up the ſetting with paſte, and ſet it into an oven with bread, and ſo let it ſtand for ſix houres after the bread is drawn, and it will recover its priſtine *durities*, or hardneſſe. For the colouring of cryſtall Baptiſta Porta doth adviſe this.

To colour cryſtall that it may reſemble gemms with colour.

R. *Partes ſtibii ſex, auripigmenti partes quatuor, arſenici & cryſtalli partes tres, ſulphuris partes tres, tutiæ partes duas, fiat pulvis tenuiſſimus ac olla indatur, ſuſpende in hoc fruſtulam cryſtalli, vel in æneis pilis incluſam, vel nudam immerge in hoc pulvere, & ità opponantur igni ut quaternis vel quinis horis excandeſcant, ſed ſine follium flatu, nè liqueſcant, vel in partes diſſiliant:* you may at your pleaſure take a little bit out and put it in again, till it doth anſwer your expectation: in taking this from the fire, you muſt beware of over ſudden cooling of it, leſt it cleave and break. If you would have the colour of a *Jacinth*, you muſt remove them ſooner from the fire: if a purple colour you muſt let them remain longer on the fire.

The manner of taking away the colours of gemms naturally coloured.

THe Jewellers have alſo wayes to take away the colours of gemms naturally coloured, as of the *Amethyſt*, *Granate*, and *Topaz*. and this they can do, either wholly or in part, wholly, by illining or anointing it over with *creta*, or chalk, and then committing it to the fire; In part, by anointing onely that part from which you would take the tincture or colour, and then expoſing it to the fire; ſo you may make a gemm partly a *Diamond*, or partly a *Saphire*: or of a *Ruby*, partly a *Ruby*, and partly a *Diamond*.

For the making of factitious gemms with their perfect tincture, Artiſts are wont to do this; they will calcine *ſilices* and *topatius* even as cryſtall; then they will adde a colour, and ſo make *paſtam ad gemmas*: thus for the making of a *Smaragde*, they will calcine *ſilices* and *topatius*, and for the colour adde *minium* and alſo *verdegreace*, and ſo make a paſte for a *Smaragde*. And for a *Jacinth* they will adde *ceruſſe* and *crocus Martis*: for a *Chryſolite*, *minium* and *ceruſſe*. For a *Saphire*, *Zaphura*, or *Lapis lazuli*, or elſe *Sal Armoniacum* and *Argentum*: and for a *Diamond*, *Stannum*: for a *Ruby* in like manner. Boetius *l.* 1. *p.* 33.

Artificiall ſtones.

ARtificers are wont to make artificiall marbles after this manner, *R. gypſum, calcem, ſalem, ſanguinem*

ſanguinem bovinum, pulverem lapidum, fruſtulas marmorum vel Faſpidum, cum aceto, vino, cerviſia vel lacte, vel ejus ſero miſce bene, & in pultem redigantur, ut in menſam vel in columnas fundi poſſint. The various colour being added, this ſubſtance muſt be agitated and ſtirred up and down with a rod, that the veins may the better be diſpoſed for a marble or ſtatue; and when this is throughly dry *cum ſmegmate vel oleo,* it will receive an excellent politure.

Foyls and Bracteæ.

BEſides this tincturing of the ſubſtance of the gemm, there is an uſe of foyls and *bracteæ,* which Jewellers have for the ſetting off of the beauty of diaphanous and tranſparent ſtones; and the uſe of theſe is very neceſſary; for whatſoever diaphanous gemms are included in their *cyſtis*, or ſettings and encloſures of gold, as in rings or ouches, they ſend forth no rayes, or ſplendour, unleſſe they have under them a *bracteæ*, leaf, or foyl, which may *inſtar ſpeculi* repercuſſe and reverberate the light, and by this means delight the eye with rayes and ſparklings. For this purpoſe it is that *bracteæ* and metallick foyls were invented, which together with the repercuſſion of the light which they make; do alſo augment the tincture of the gemm; and by their various colours, by which for this purpoſe they are tinctured, they do quicken and revive the fading diluted colour of the gemm. Theſe *bracteæ* or foyls, are made either *ex foliis æris, auri, vel argenti*; then they are wont to prepare theſe by hanging them in

threads in a furnace made for the ſame purpoſe; that ſo they may be tinctured with the vapour of that which being burned in the lower part of the furnace, doth aſcend for that purpoſe; thus for a green foyl they are wont to burn green feathers in the lower part of the furnace, which by their vapour will tincture the foyl with a green colour: for to tincture the foyl with a blue colour, they are wont to burn blue feathers: for an emerauld colour, they are wont to burn the leaves of box after the ſame manner: and for a Ruby colour ſcarlet wool, or ſcarlet flocks. So Baptiſta Porta *lib. 6. Mag. Nat.*

The way of poliſhing and engraving pretious ſtones.

THe engraving and poliſhing of pretious ſtones, doth require, that it may be aptly done, a fitneſſe, and preparedneſſe in the ſtones; for this purpoſe, a *Jaſper*, *Agate*, or *Marble* may be fitted by a whetſtone or grindſtone, on which they are firſt to be whetted or ground, and then that they may be brought into a more exact form, they muſt be rubbed or ground with the groſſe powder of a Smiris upon an *orbem ſtanneum*, after which they do give them a ſplendour by poliſhing them *cretâ tenuiſsimâ* or *Argillâ*, that is, with *terrâ Tripolitanâ*.

The Diamond alone becauſe of its hardneſſe can onely by its own powder be formed by grinding. Which powder is alſo uſed for the more ſpeedy excavating

cavating and forming of other gemms by grinding them with it: for this purpoſe, there muſt be a little orb of iron which may eaſily be turned up and down, which iron orb by its ſwift motion and continuall rotation or turning, doth forceably rub the powder of the Smiris or Diamond againſt the gemm for the engraving of it, and ſo doth by little and little excavate it. Marbles and other ſtones may by this iron or ſteel orb, alone without either of the powders, be without fear and danger of breaking excavated; but gemmes cannot. Boetius *lib.* 1. *pag.* 35, 36.

A ſtone for hardneſſe next to the Diamond is the Smiris, the powder of which is uſed as the powder of the Diamond in the forming and fitting of ſtones for politure and engraving; which being formed and poliſhed, may be thus engraven, either with letters or forms. Cover the poliſhed ſtone with *Sevo* or with thin wax, then take an iron pencill and engrave in the wax, even to the very ſtone, what letters or forms you pleaſe, which being done, poure *aqua ſtygia*, or *aqua regia*, or *aqua fortis*, into thoſe places where by engraving you have taken away the wax with your pencil, thus let the ſtone reſt for a day, and the *aqua ſtygia* by eating into the ſtone will engrave that part of the ſtone from whence the wax was taken away, and the reſt of the gemme which is covered with the wax vvill remain vvhole and untoucht.

Faculties of Gemms.

SOme there are that do deny gemms the proper grace of their naturall faculties, but ſurely this poſſeſſion doth diſpoſſeſſe them of their intellectuall guide of reaſon, or elſe by the onely elementary conſtitution they would have been informed, that ſuch pure matter could not be without their vertues, nor theſe forms more then others want their *vires*; ſince that there are virtuall forms, reaſon by experience every day confirmed doth convince us: Nor this elementary union ſympathizingly concording to beget a glorious beauty, be without its *quinta qualitas*, the reſult of the union of its elements wonderfully altered and diverſly *inter ſe mixtorum*. Surely men of ſuch opinions never dream'd of *gratia parvis*, but we know that God hath given every thing its proper grace: for *Ineſt ſua gratia parvis, Ineſt ſua gloria gemmis*, and *Ineſt ſua ſingulis propria virtus*. Now as theſe who do denie the elements *inter ſe mixtis*, their peculiar qualities, and their eſſence or *quinta qualitas*, which doth ariſe of their coaleſcencie, as the reſult of the union of their matter, do *à ſcopo nimis aberrare*: ſo on the other ſide thoſe do keep at no leſſe a diſtance from the truth, who do attribute to gemms that are naturall things, powers ſupernaturall or above nature, as will appear in what follows.

Effects

Effects attributed to pretious ſtones, which their nature is not capable of effecting.

SOme do impute ſuch *vires* to produce ſuch effects to them, as theſe creatures cannot poſſibly be capable of: It is impoſſible that by the power of the naturall faculties, or elementary qualities of gemms or pretious ſtones, any man ſhould be made to walk or be inviſible; though Albertus Magnus and other Lapidiſts do attribute ſuch a faculty as this to the ſtone called *Opthalmius*. And as impoſſible it is that any ſtone ſhould be ſo prevalent, by the power of any vertues which naturally it can be capable of, as to obſcure the Sunne, or darken his beams, which facultie Plinie and others do attribute to the *Heliotrope*, of which they ſay, that if you put it into water in a veſſel oppoſed to the Sunne, it will *mutare fulgorem ſolis accedentem percuſſu ſanguineo*, and for this cauſe they call it ἡλίου στροφὴν, that is, *ſolis verſionem*. But ſuch have been the errours of the great ſearchers out of the ſecrets of nature, as that they have attributed to inanimate creatures which are of the loweſt orders of all natures productions, powers ſupernaturall, and *vires* which their natures are not capable of knowing, and therefore they cannot poſſibly produce ſuch effects as they report of them: Such as are the making of men eloquent, or making of men poore; or the making of men acceptable, or to be favoured, or rich, or fortunate, or ſafe, or ſecure. Yet are the ſtrange tranſportations of ſome

Opthalmius lapis.

Heliotrope.

Extraordinary effects of gemms.

men even at this day ſuch, as that they will not let to affirm theſe things to be true in their experience; affirming that to be done by the naturall faculties of precious ſtones, in making men either favoured or accepted, or to be inviſible, or to be ſuddenly enricht, which being contrary to the workings of God with men, muſt neceſſarily be the work of the devil, to delude, and enſnare, and enthrall men by.

Strange things are reported of Lapidiſts concerning the vertues of gemms, and of their ſtrange changes upon ſeverall occaſions: Of the Diamond which the high prieſt wore in the breaſt-plate of Judgement upon the Ephod, when he went into the *Sanctum Sanctorum*, it is ſaid, That if the Jews had ſinned againſt God, the Diamond would turn black.

Of an Emerauld Lapidiſts ſay, That it doth diſcover adultery, and that where it accidentally meeteth with ſuch perſons, it doth ſuffer very ſtrange changes and alterations.

Of the Turkey-ſtone they ſay, That it doth participate with all its maſters dangers, perils, and evils; and that it doth receive his injuries, and the harm of his blows, falls, and contuſions into it ſelf. But thoſe that think that any gemms or pretious ſtones are ſenſible of injuries, or affected with ſtrange alterations, by a naturall diſcord which is betwixt them and unclean perſons, think much amiſſe: for all gemms are materiall, mixt, naturall things, and therefore by their own proper qualities they can effect nothing elſe but naturall things: now to the effecting of all naturall things, whether the thing be effected by a gemm,

or

or by any other thing, it is neceſſary that there ſhould be a connexion, or ſome kind of knitting of its cauſe with the effect; but in the diſcovering of ſinne by gemms, or in the gemms receiving its maſters injuries into it ſelf, there can be no ſuch probable connexion of the cauſe with the effect found: therefore ſuch admirable effects cannot truly be ſaid to be the naturall effects of gemms. Nevertheleſſe, though gemms as being materiall mixt bodies, cannot by their own proper power and faculties produce ſuch admirable and ſupernaturall things, as that we may ſay that they are truly and abſolutely cauſes of ſuch effects; yet they may be ſaid to be continent cauſes, if we grant that which ſome affirm, namely, that oft-times they are the habitacles of *daemones* and intelligences, which Johannes Langius in his epiſtles calleth *ſyderum & orbium motores*: and if we grant that gemms are habitacles for theſe, we need not doubt but theſe are thoſe occult properties, which do produce ſo many ſtrange effects as are imputed either to the interpoſition, wearing, or carrying of gemms, to the deluding of the ſenſes of men in the right underſtanding of the truth of the nature of gemms and pretious ſtones.

Langius his opinion of the generating of gemms.

THeſe intelligences, δαίμονες, or *motores orbium*, inhabiting under this concave orb of the Moon, and cooperating *aethereo ſyderum calore & ſpiritu*, do (ſaith *Johannes Langius, epiſtolis medicinalibus*) without

out a *ſemen*, both by ſea and land produce various effigies in rocks, *in Conthyliis*; and likewiſe they do oft in their ſporting frolicks, transform by the power of their own elaborations, ſticks, boughs, trees, and plants, into ſtones; and by a like admired *Metamorphoſis*, they do procreate many ſtrange births, ſome of them to be admired for their originall, others for their ſhape. Theſe are thoſe that do poſſeſſe men with the ſtrange effects of gemms, as if they were the true cauſes of ſuch effects; when indeed they are the uneſpyed, and ſecret productions of the hidden workings of theſe intelligences. Though Cardan, Albertus, Rueus and others do affirm that gemms are the cauſes of ſuch effects, yet their affirmation in this kind muſt not be received as truth, becauſe there is no kind of affinity, ſimilitude, or proportion at all betwixt this kind of complexion, or betwixt this cauſe and this effect: for the effects of this kind are oft times more perfect then the cauſe. And yet the axiome is, *perfectionem effectûs contineri in cauſa.* But it cannot truly be ſo ſpoken of gemms and pretious ſtones, the effects of which, by Lapidiſts are ſaid to be, the making of men rich and eloquent, to preſerve men from thunder and lightning, from plagues and diſeaſes, to move dreams, to procure ſleep, to foretell things to come, to make men wiſe, to ſtrengthen memory, to procure honours, to hinder faſcinations and witchcrafts, to hinder ſlothfulneſſe, to put courage into men, to keep men chaſte, to increaſe friendſhip, to hinder difference and diſſention, and to make men invifible, as is feigned by the Poet concerning Gyges ring, and affirmed

Extraordinary effects of gemms.

affirmed by Albertus and others concerning the *ophthalmius lapis*, and many other ſtrange things there are affirmed of them, and aſcribed to them, which are contrary to the nature of gemms, and which they as they are materiall, mixt, inanimate bodies neither know nor can effect, by the proprieties and faculties of their own conſtitutions: becauſe they being naturall cauſes, can produce none other but naturall effects, ſuch as are all the ordinary effects of gemms: that is, ſuch effects as flow from their elementary matter, from their temper, form, and eſſence; ſuch as are the operations of hot and cold, and of all the firſt qualities, and all ſuch accidents as do ariſe from the commixtion of the firſt qualities: ſuch as are hardneſſe, heavineſſe, thickneſſe, colour, and taſt. Theſe all are the naturall faculties of gemms, and theſe are the known effects of the union of their matter, and of the operation of the firſt qualities one upon another.

Supernaturall effects of ſtones.

THere may no doubt ſupernaturall effects be wrought by gemms, and ſtones, but not ſuch as can properly be ſaid to be the effects of gemms or ſtones; or of which gemms or ſtones can be truly and abſolutely ſaid to be the cauſes, but onely inſtrumentall cauſes. Such effects as theſe are wrought either by the power of God, or of the devil. What the ſtrange effects wrought by ſtones in the power of Satan are, will appeare by the ſurvey of the extraordinary effects of gemms and pretious ſtones before mentioned.

The ſupernaturall effects of ſtones aſcribed to God in holy writ, are ſuch as the Lord God produced in the wilderneſſe to manifeſt his power, and to make his name great in the ſight of his people Iſrael; ſuch was his bringing water out of the rock by the ſtroke of Moſes rod upon it, Deut. 32. 13. The rock here was the inſtrument by which this ſupernaturall effect was wrought, but not the cauſe of the effect of the flowing forth of water for the quenching of the thirſt of Iſrael, for in truth none other effectuall efficient cauſe there was of this effect, but onely Gods holy Spirit working in and by the rock, as by its inſtrument, conduit, or emiſſary, that ſo it might wonderfully ſend forth waters of its own ſpringing up, as from a fountain to refreſh the drought of Iſrael in a dry and barren wilderneſſe.

That we may not be miſtaken in the effects of creatures, it is neceſſary that theſe things ſhould be known.

1. WHat are the cauſes of effects.

2. How to judge of theſe cauſes, whether they be true or falſe, whether they be ſupernaturall or naturall cauſes, divine or diabolick cauſes.

3. How many kinds of effects from all cauſes may be found in the whole Univerſe.

The cauſes of all effects.

I. The cauſes of all effects are either ſupernaturall or naturall; they are ſuch cauſes as are either truly and abſolutely cauſes, or cauſes falſly ſo called; or elſe they are manifeſt divine cauſes, or diabolick ſeeming divine cauſes: all which may be comprehended under the two firſt heads of ſupernaturall and naturall cauſes.

II. That we may judge of theſe cauſes whether they be ſupernaturall or naturall, divine or diabolick, true or falſe: theſe following rules muſt be obſerved.

Rules.

Supernaturall cauſes they may be taken to be,

1. If it be manifeſt that the effect doth never follow the cauſe, or that it followeth it by accident.

2. If wiſe underſtanding judicious men, who have the uſe and experience of things, do upon the ſuppoſition of ordinary effects, deny that which is thought to be the cauſe, to be truly the cauſe.

3. If by comparing the thing with other cauſes which are known, the manner of applying of it be very different, involved, and intricate.

4. If the thing have no affinity with its effect, as here, when *Arbor dicitur producere bovem.*

5. If the cauſe doth produce the effect *ſeparatim*, and without any conjunction of other cauſes, which have in them a power of producing.

6. If the cauſe doth produce an effect to ſome

end to which properly the effect doth not belong.

7. If ſuch an effect from ſuch a cauſe do never again happen, notwithſtanding the remaining or exiſting of ſome or of all the ſame conditions.

Rules è regione.

Naturall cauſes they are taken to be,

1. If it be manifeſt that the effect doth really follow the cauſe, and not by accident.

2. If prudent pious men do upon the ſuppoſitions of ordinary effects according to their experience, in the uſe of things, not deny that which is taken to be the cauſe, to be truly the cauſe.

3. If the thing effected by ſuch a cauſe, being compared with known cauſes, doth not in its manner of applying differ, or is not involved, or intricate.

4. If the cauſe have affinity with its effect, that is, if it do produce ſuch an effect as is meet for ſuch a cauſe to produce.

5. If the cauſe doth produce the effect not *ſeparatim*, but by the conjunction of other ordinary cauſes, which are endued with power and do uſually joyn together for the producing of ſuch or ſuch an effect.

6. If the cauſe doth produce an effect for the ſame end to which properly the effect doth belong.

7. If that the ſame conditions exiſting, the ſame cauſe doth produce the ſame effects.

Whether

Whether the cauſe be Divine or Diabolick, true or falſe, it will thus appear.

WHat ever things there are that are truly called natural, if they undergo or ſuffer an impulſion into various and divers parts, indeterminately and confuſedly, they cannot be ſaid to be otherwiſe moved, then by an extrinſick power of impulſion; which power if it be not open and manifeſt, muſt of neceſſitie have an occult and ſecret ſpirituall mover, which can be none other but either God or the devil, either good or bad angels.

Upon theſe grounds it may be concluded, that the motion of the ring in which the Turkey-ſtone is ſet, by the pulſation of which (it being hung by a thread perpendicularly in the midſt of a glaſſe) againſt the ſides of the glaſſe, the houres are ſpontaneouſly indicated; it may (I ſay) be concluded, that if this pulſation by which the houres are indicated or ſhewed, be not cauſed by the motion of the hand of the perſon that holds the ſtring, to which the ring is faſtened (*quod puto*, ſaith Boetius,) then that this motion hath its perfection from the power and help of the devil.

Gemms and pretious ſtones are onely naturall cauſes of their effects, and for this cauſe the effects of them can be onely naturall, and ſuch as are alwayes reall effects, and never intentionall; and materiall effects and ſeldome ſpirituall (*viz.*) then onely when ſuch effects are effected by ſome mean or other, which may more truly be determined to be a cauſe then the gemm it ſelf.

What we have determined concerning the *Turchoyſe*, the ſame (upon the ſame ground) we may determine and conclude concerning thoſe gemms, which are ſaid to work ſtrange effects by the power of celeſtiall figures engraven on them: for all ſuch celeſtiall figures are nothing elſe but fictitious and imaginary things, and no reall entities at all; and therefore cannot be capable of any power to do any ſuch ſtrange effects: neither have ſuch figures, or can they have, any conveniencie or agreement at all with things here below, for the producing of any effects in them, or by them.

Whether the cauſe of this or that effect be the true cauſe of it or no, will appear by theſe things.

Rules.

1. If the cauſe be ſuch as doth in no kind repugne or contradict the effect. Such cauſes as theſe are all thoſe that have in themſelves the perfection of the effect, either virtually or formally.

2. If the cauſe do act within the certain limits or bounds *alicujus ſpatii*, together with all ſuch things as are neceſſary to produce ſuch an effect. And the effect doth upon this working of the cauſe, without any prejudices to the contrary, or interceding impediments, follow in its determined time, according as the cauſe within the determined bounds of its ſpace is applyed, to produce this or that effect ſooner or later.

3. If

3. If the cauſe applyed have alwayes the ſame power and force, and be free from all ſuperſtition, and every ſuſpition thereof.

4. If that the cauſe being taken away, the effect (notwithſtanding all other things and circumſtances remain) doth not, or cannot follow.

III. That we may not be miſtaken in the effects of creatures, it is neceſſary to be known, How many kinds of effects from all cauſes may be found in the whole univerſe.

Such effects as are to be found in the world are theſe:

Firſt, Effects which are in their perfection above all the power of naturall cauſes: For example ſake, 1. No naturall cauſe can ſeparate the heat from the fire; nor can any naturall cauſe make fire to burn without heat. 2. It is above the power of a naturall cauſe to make a man inviſible: no naturall cauſe can effect this, becauſe man is an opake or an obſcure body, and ſuch a body as hath no perſpicuity or tranſparency at all in it: and therefore it cannot poſſibly be, that it ſhould be made inconſpicuous or diſapparent without ſome preſent impediment. *Boet.*

Secondly, Effects which do not exceed the power of naturall cauſes, but yet are above the mean which naturall cauſes do uſe, to produce ſuch effects according to the preſcript rule, and order of nature. Such an effect is this which followeth: The Saviour of the world was born of the Virgin Mary, as it is naturall for a man to be born of a woman: but here, the mean and manner of begetting, and of conception is ſupernaturall, and above all the power of naturall

rall cauſes: for here the conception and manner of begetting was altogether without the coition and congreſſion of man, which effect could be no otherwiſe cauſed then by a ſupernaturall power; namely by the power of God, who did wonderfully effect the conception and birth of Chriſt in the wombe of the Virgin, by the power of his Holy Spirit. Theſe two firſt kinds of effects which have been and may be found in the world, Boetius (*l.* 1. *p.* 45.) ſaith, cannot poſſibly be brought to paſſe, but by the power of God, or of the devil, God permitting.

Thirdly, Effects which do not exceed the power of naturall cauſes, but yet the cauſes applyed for the producing of theſe effects do not keep the ordinary mean for the producing of them. Such an effect is this of Chymiſtry, when as by chymicall art gold is made of ſilver: And ſuch an effect is this which is ſo oft practiſed in natures orchards and gardens; where when as nature by her own work doth produce the ſeverall ſpecies of fruits from their own proper and peculiar originalls; art doth as it were force and violate her to contradict her law, rule, and order, by inſitions and inoculations: and by this means we may oft times ſee the fruitfulleſt and beſt trees, bearing fruits of other ſtocks then their own.

Fourthly, Effects which do depend upon naturall cauſes, which obſerve and keep the ordinary mean which are to be applyed for the producing of ſuch and ſuch effects. Such an effect as this it is, when as the rain is generated by the aſcending up of vapours; and when ice is diſſolved into water by the power of the heat of the Sunne; and when man is generated

of

of man and woman, which is natures ordinary way for generation.

Theſe are the effects which are found in the world, the fourth and laſt kind of which are purely naturall; which that they may be really ſo, they do require divers conditions.

Conditions to make effects truly naturall.

1. That an effect may be truly naturall, it is required, that there ſhould be ſome ſubject preſent, which may receive the effect from its efficient cauſe.

2. It is required, that there ſhould be a certain latitude or diſtance betwixt the efficient cauſe, and the ſubject out of which the effect is to be produced, beyond which diſtance or limit, the effect cannot at all be produced; this will appear by this ſolary example. The ſunne whileſt it hath its reſidence *in Tropico Auſtrali*, or in the Tropick of *Capricorn*, cannot ſo warm the regions and countreys that are ſituate about the Artick pole, as it doth warm them when it hath its reſidence in the Tropick of *Cancer*.

3. That an effect may be naturall, it is required, that the efficient cauſe or immediate agent be not hindred in its action upon its ſubject, and penetration of its ſubject, by ſome other interpoſing or intermediating body.

4. It is required, that there ſhould be a full ſpace betwixt the cauſe and the effect, that is, *ſpatium continuum & conjunctum*; that ſo naturall things may *in ſe mutuò agere*, and thus obtain their perfection.

5. That an effect may be naturall it is required,

that the medium or mean which is betwixt the cauſe and the ſubject, be aptly and fitly diſpoſed to receive the vertue of the agent or efficient, for elſe it is impoſſible, notwithſtanding the concurrency of all other things together, that any naturall effects ſhould univerſally follow.

This for the preſent as concerning the nature and vertues of gemms and pretious ſtones in generall. It followeth that we ſhould make progreſſe in our inquiries and diſcoveries of every gemme and pretious ſtone in particular.

Of the diviſion of Gemms.

IN the former treatiſe we have ſpoken concerning the cauſes, natures, and effects of gemms in generall. In what followeth, we ſhall according to Anſelmus Boetius ſhew how they are divided, and how particularly diſtinguiſhed according to their ſeverall *ſpecies*. The diviſion which he maketh of gemms or ſtones is this.

Diviſion of ſtones or gemms.

Stones or gemms are either 1. Small. or, 2. Great.

Small ones are either 1. Rare. or, 2. Common.

The Rare and excellent ones are either 1. Hard. or, 2. Soft.

1. The ſmall hard ones are either 1. Fair. or, 2. of an evil Colour.

The Fair ones, are either 1. wholly ſhaddowed as the *Turky ſtone*, and the *Chameus*. or, 2. partly ſhaddowed, as the *Sardonyx*, the *Aſtroites*, the *Leucoſapphirus*, and the *Opalus*.

Again, the Fair ones are tranſparent either 1. with Colour. or, 2. without Colour.

1. The Fair ones tranſparent with Colour are the *Jacinth, Beryll, Ruby, Praſius, Rubicell, Chryſopraſſus, Spinell, Granat, Amandine, Chryſolite, Ballaſſe, Carbuncle, Saphire, Emerauld, Gemma Solis, Almandine.*

2. Fair ones tranſparent without Colour are *Diamonds.*

The small hard stones, which are rare and pretious though of an evil Colour, are these, the *Pantarbe, Brontia, Umbria, Dracontia, Ætite, Lapis palumbellus, Chelidonius*, and the *Snake-stone*, or *Egge*.

Secondly, The pretious, small, rare and soft stones are either 1. Fair. or, 2. of an evil Colour.

1. Fair; first in Colour, as the *Pearl, Bezoar, Molochite*.

2. In Figure, as the *Oculus Cati, Gloßopetra, Umbilicus Marinus, Lapis Judaicus* and the *Trochite*.

Secondly, The small, rare and soft stones of an evil Colour, are the *Morochthus*, and the *Lapis Caymaus, Enorchis, Lapis Cevar, Lapis Manualis, Lapis Renalis, Lapis Porcinus, Lapis Anguium, Enhydros, Callimus, Lapis Malacensis, Lapis Manatus, Lapis Hysstericus, Lapis Tuberonum, Lapis Bugolda*, and the *Toad-stone*.

The small common stones are either 1. Hard. or, 2. Soft.

Hard first, as the *Bristol diamonds*, or the *Pseudodiamond* of Hungary.

Or Soft secondly, as the *Lapis fellis, Oculi Cancri, Lapis Spongiæ, Lapis Limacis, Lapis Carpionum*, and *Lapis Percæ*.

The Great stones are likewise 1. either Rare, Hard, Fair and shaddowed. or, 2. Rare, Hard, Fair and transparent.

1. Of the first kind are the *Porphyrite, Heliotrope, Smaragdite, Lapis Lazuli, Agate, Corall, Ophyte, Cornu Ammonis*.

2. Of the other kind are the *Amethyst, Topaz*, and

the

the *Smaragde-prasius*, which do all partake of tincture or colour; and the *Crystall*, and the *Bohemian Diamond*, which are diaphanous without colour.

Again, the rare hard stones are, 1. Some of them of an evil colour, as the *Steatite*, *Eneost*, *Stalagmite*, *Onyx*, *Ceraunia*, *Basaltes*, *Smiris*, *Dactylus Ideus*, *Ossifragus*, *Stalactite*, *Lydius*, *Lapis Nephriticus*, *Bloudstone*, *Geodes*, *Loadstone*, *Hephestite*, *Hysterapetra*.

2. Again, of the great and rare stones, some are 1. soft, and fair (1. either in colour, 2. or figure,) or 2. soft and evil coloured.

In colour, first; as the *Specularis*, *Alabaster*, *Amber*, *Lapis Armenus*.

In figure, secondly; as *Amites*, and *Stellaris*.

Those that are soft and evil coloured, are the *Asius*, *Samius*, *Ageratus*, *Melitites*, *Gagate*, *Porus*, *Schystus*, *Thyites*, *Amiantus*, *Galactites*, *Magargenteus*, *Hematite*, *Phrygius*, *Calamita Alba*, *Fungifer*.

Again, there are common great stones which are 1. either hard, fair, and beautifull; or, 2. hard, and evil coloured.

First, the hard, fair, and beautifull stones of magnitude are the *Marble*. Secondly, common, hard, evil coloured stones, are the *Whetstone*, *Pyrite*, the common stone, the *Flint*.

Soft stones of magnitude are *Gypsum*, *Pumeise*, *Lythanthrax*, *Talcum*, *Scissilis*.

This is the generall division of gemms and stones, according to Boetius. Now of stones in particular, and of their generall species.

The first part of the Lapidarie.

Of Gemms in particular.

Of diaphanous and whole transparent Gemms.

CHAP. I.

Of the Diamond.

Description of the stone.

THe true *Diamond* is a hard, diaphanous, perfectly transparent stone, which doth sparkle forth its glorie much like the twinckling of a glorious starre.

The true *Diamond* is the hardest of all other stones, without colour, like unto pure water transparent: and if it have any yellownesse or blackenesse, it is a fault in it. This property it hath, that it will snatch colour and apply it and unite it to it self; and thus will it cast forth at a great distance its lively shining rayes, so that no other jewell can sparkle as it will. By this excellent emission of its rayes or beams, or by this generous sparkling forth of its glory, do the most judicious Jewellers distinguish the true *Diamond*, from those of bastard kinds.

Of its tincture or foyl.

THe tincture, foyl, or colour for a true *Diamond* is thus made: R. pure mastick and a small quan-

quantitie of ivory, burnt black, and finely powdred; mix it according to art, then distend a small portion of it, and fitly dispose of it for your foyl or tincture.

Of the adulteration of the Diamond.

A True *Diamond* may be adulterated or counterfeited with a *Saphire*, or with an orientall *Amethyst*, or with a *Topaze*, or with a *Chrysolite*, and by all stones that are hard and transparent, and which may be deprived of colour. The colour of those gemms which are fit for this use, may by the heat of fire be thus taken away: *R. calx viva*, and the filings of steel; bury the stone in them, or in either of them, then overwhelm them w^th^ a fire at some distance frō them, that the stone by degrees may grow hot; then increase the fire, and the colour will vanish. Jewellers and judicious artists well know in what space of time, by the continuance of this great heat, any such excellent gemms may be deprived of all their colour; which colour of the gemm, so soon as they do conceive it is vanisht by the power of the heat, then do they extinguish the fire by degrees, till there be no more heat left. And if by this first operation it be not perfectly deprived of all its colour, then the same work must again be begun, and carried on as before by severall degrees of heat: and if need be, it may be iterated: ever observing this, that as it must be heated by a graduall increase of the fire, so likewise by a graduall decrease of the heat the fire must be extinguisht: for the over-sudden heating or over-sudden cooling of the stone may cause a crack *Caution.*

in

in it, and ſo rob the ſtone of the glory of its beautie and value, and the artiſt of his hopes by fruſtrating him of his endeavours.

Anſelmus Boetius ſaith, that he ſaw a *Topaz* in this manner changed, (which is better then an other ſtone for this purpoſe becauſe of its hardneſſe) and it was in weight ſeven *Ceratia*, that is, twenty eight grains, which was valued at three hundred Florens, or Crowns.

Of the names of it.

In Hebrew יהלום *jahalom*, that is, *Adamas:* as Exod. 28. 18. it is the third ſtone of the ſecond row of ſtones that was ſet in the Ephod. Ἀδάμας cometh of the vetb δαμάζω, that is, *domo*, to tame; hence by the expoſition of S. Hierome *adamas* doth ſignifie *indomitum*. And well may it ſo do, for neither fire nor iron can deſtroy its glory, or leſſen its vertue. In Arabick it is called *Hagar ſubedhig*, and *Almatz*. In Dutch *ein Dhemuth, Demanth*, and *Adamant-ſtein*, and *Adamant*. In Italian and Spaniſh *Diamante*. In French *Diamant*. Of the natives where it is found *Iraa*. In the Malayan language it is called *Itam*.

The kinds of it.

There are ſeven kinds of *Diamonds*.

1. An Indian one, which hath ſome affinitie with Cryſtall. This is turbinated into an edge with a ſmoothneſſe of ſix ſides, and it is ſometimes found in the bigneſſe of a filberd; but this is not found growing in gold.

2. An

2. An Arabian one: this alſo doth not grow in gold: this is ſomewhat leſſe, but like unto the former. Neither of theſe (ſaith Pliny) can be hurt by anvile and hammer, becauſe of their irreſiſtibility; for being ſmote they flie away unhurt. *Plin. cap. 4. lib. ult.*

3. A Chencrean one, which is found in the bigneſſe of Millet ſeed.

4. A Macedonian one, which is found in gold like unto a Cucumer ſeed.

5. A Cyprian one, enclining to an aerie colour, very efficacious in Phyſick.

6. The ſixth is called *Sideritis*, from the ſplendor of ſteel: it is of greater weight then the reſt, but unlike in nature: This may be broken like the Cyprian one, and cut with an other *Diamond*. Of theſe we may reade in Plinie. *Plin. lib. 37. cap. 4.*

7. The ſeventh kind are either round or ſix-cornered. Of theſe ſome are harder then others, and ſome ſofter. Theſe have their names from the places in which they are found: hence ſome of them are called Bohemian ones, ſome Armenian ones, ſome Engliſh, Scottiſh, and Hungarian *Diamonds*. Of theſe kinds the cornered ones are the ſofteſt, and not much better then Cryſtall: The round ones are like unto flints, but farre harder, and theſe have the ſplendour of the orientall ones: But theſe, as ſaith Boetius, can no wiſe be taken for the true ones, becauſe they do not receive into themſelves the tincture. To theſe we may referre the Cyprian ones, and Macedonian ones.

The orientall ones are diſtinguiſht from the place where they are found.

Of the places where they are found.

The places in which they are found are theſe.

In *Biſnager* a Province of the Eaſt *Indies* there are two or three rocks which bring forth *Diamonds*, ſometimes exceeding the weight of two drachmes a ſcruple and eight grains.

In *Decan* a Province of *India* there is another rock which is called *The old Rock:* the *Diamonds* which are here found are called *Diamonds of the old Rock:* they are ſmall, but very good, naturally poliſht, and of great price.

In *Tanian* in *Malacca* there is a rock which bringeth forth *Diamonds*, which are alſo called *Diamonds of the old Rock:* theſe are ſmall, but of great eſteem, and more ponderous then the others.

Monardus writeth, that he ſaw *Diamonds* in *Biſnager* that weighed 140 *ceratia*, and every *ceratium* is foure grains. The greater ones are found in the lower part of the rock, the ſmaller ones in the upper part of the rock: when the upper part of the mine is exhauſted, after two years, new *Diamonds* are brought forth and perfected; ſo ſaith Boetius. Theſe are never found in *Cryſtall*, as Plinie thought.

Of the properties, qualities, and faculties of the Diamond.

A True *Diamond* is ſo farre from being hurt by being in the fire ſome dayes, that it will grow better for it, and the more fair. Plinie ſaith, that a true *Diamond* cannot be hurt by the force of hammer and

and anvil: other *Diamonds* experience teacheth us may be brought into broken pieces, and into a fine impalpable powder, by the frequent ſtrokes of an hammer.

The Ancients have had a very high eſteem of this ſtone, inſomuch as they have thought it to be endued with divine vertues; and ſuch, as that if it were but worn included in a ring, or carried about a body neare his heart; it could aſſwage the fury of his enemies, and expell vain fears from his heart, preſerve from ſwooning, drive away the vanity of dreams, and the terrours of the night, and fruſtrate all the maligne contagious power of poyſons. It is reported of it that it is endued with ſuch a faculty, as that if it be in place with a *Load-ſtone*, it bindeth up all its power, and hindereth all its attractive vertue. *Andreas Baccius, c. 15. de Nat. gemmar.*

If a true *Diamond* be put upon the head of a woman without her knowledge, it will make her in her ſleep, if ſhe be faithfull to her husband, to caſt her ſelf into his embraces; but if ſhe be an adultereſſe, to turn away from him. It hath been by the Ancients eſteemed powerfull for the driving away of *Lemures*, *Incubos*, and *Succubos*; and for the hindring of contentions, and to beget in men courage, magnanimitie, and ſtout-heartedneſſe, as appeareth by Serapius, and by Evaces in his Lapidary. Rulandus, Cardanus, Garcias have all written very much concerning theſe vertues, to which Authours I referre the courteous Readers for their further ſatisfaction, till better opportunities ſhall give me leave to make a further diſcovery of what may be ſpoken concerning it. *Serapius, l. agre. c. hagar. Subedhig.*

Of the dignities and value of it.

IT is of esteem for that it hath been of sacred use; what was the sacred use of it may be read in the book of Exodus, where we find it to be one of those excellent stones which was to have a place in one of those foure rows of ouches of gold set in their severall orders upon the breast-plate of Judgement, upon the Ephod of the High-priest. It is of esteem for its own irresistible hardnesse, and for the puritie of its perfect glory, in which it doth excell all other gemms of price, and stones of worth.

Exod. 28. 18.

A well polisht *Diamond* without fault, of the weight of a pepper-corn, is worth ten Florens or Crowns, Boetius *pag.* 63. If a pointed *Diamond* be fitly fastened in any convenient thing that a man may hold it withall, he may not onely cut glasse with it, but also penetrate arms with it, as saith the same Authour.

There is a proverbiall use of it, which is taken from its hardnesse, and applyed either to animate or inanimate things: of this use we may read in Statius, Hesiode, and Horace. A main use of it there is in the way of Symboles and Emblems: for by it is figured innocencie, constancie, and fortitude.

Statius lib. 1. *Hesiod. l.* 1. *Horat.* 1. & 3. *carm.*

The forms into which most commonly it is cut, is a Tablet, which consisteth of one plain upper Table, and foure latterall Tables, two of which are wont to be longer then the other two, that they may make the just proportion of the upper Table; and such a Tablet as this, Boetius saith, is of form most perfect: a *Diamond* thus cut weighing one *Ceratium*

or

or foure grains, is worth fiftie Ducats or Crowns. Boetius *pag.* 64.

They are alſo cut in Pyramidall forms, with Quadrangles, but theſe are of leſſe value then the Tablets. The ſmalleſt of theſe beſt *Diamonds* are valued at very high prices, the biggeſt are of infinite value.

Cardanus in his book *de ſubtilitatibus*, maketh mention of a *Diamond* that is at Antwerp, which wanteth one ſcruple of the weight of an ounce, and is valued at the worth of an hundred and fifty thouſand Crowns. *Cardan. de ſubtil. lib. 7. pag. 345.*

The ſhivers and duſt of a good, perfect, true *Diamond* are of admirable vertue, and of very great worth, eſteem and value: for by their hardneſſe they do divide all gemms: in the engravings of all other gemms they are not onely profitable but neceſſarie; for what-ever pretious ſtones have an excellent hardneſſe joyned with their glorie, puritie, and beautie, they will want the help of theſe, or they will not eaſily be either cut, graven, or poliſht.

CHAP. II.

Of the Carbuncle or Ruby.

Deſcription of the ſtone.

THe *Carbuncle* is a pretious ſtone or gemme, which for its innate glory containeth within it ſelf the reſemblance of a flame of fire.

The true *Carbuncle* or *Ruby* is a tranſparent jewell of the colour of pure vermilion or crimſon; by how much the more fiery it doth appear in its extremity, ſo much the better it is; if it have any yellowneſſe in it, it is of the kinds of *Granates*, or *Hyacinths:* from its excellent flame it is diſtinguiſhed from other gemms which have like repreſentations and reſemblances; a *Carbuncle* is nothing elſe but a great *Rubine*, and a great *Rubine* is thought worthy of the name of a *Carbuncle*; if a *Rubine* be found ſo bigge as that it may weigh twenty *Ceratia*, that is a drachme and a ſcruple, then may it worthily be called by the name of a *Carbuncle*. Ludovicus Vartomannus a Romane, reporteth that the king of Pege a city in India, had a *Carbuncle* of ſo great a magnitude and ſplendour, that by the clear light of it, he might in a dark place be ſeen, even as if the room or place had been illuſtrated by the ſunne beams.

Of its tincture or foyl.

THis though it be a very glorious ſtone and of excellent beauty, yet a foyl is uſed to it, as to all other gemms of tranſparency & perſpicuity. The foyl is either made of tinctured Maſtick, or of a dyed

dyed vitreous ſubſtance, or elſe a red gold foyl is uſed about it.

Of its Adulteration.

IT may be adulterated by a *Rubine* of a very dilute redneſſe, by putting a red gold foyl tincture, or colour under it, or by putting ſome ſplendent glaſſe dyed with a red colour under it; And thus without diligent caution it may be taken for a true jewell, and the rather becauſe all are helpt with a foyl. Another way of its adulteration is by a white *Saphire*, or a *Cryſtall*, or a *Topaz*, or an ordinary *Diamond*, with a red gold foyl placed under it, in its encloſing, either in ouch or ring. Another way they have of adulterating of it, and that is, by glewing two fair *Cryſtals* together with a little maſtick tinctured with a red or crimſon colour: In this manner I have ſeen two pieces of *Cryſtall* ſo glewed together, as that they being once ſet with a foyl, they could hardly be diſcerned from a true *Ruby*.

The adulteration of this gemm may be thus diſcovered, Firſt by the want of ſparkling and ſending forth of lively rayes. Then by bringing the gemm to the triall of the file. A true *Rubie* will endure the file; but a factitious ſtone, or a ſoft counterfeited adulterated ſtone will not. Another way of diſcerning the falſhood will be this: take the jewell you ſuſpect, and direct your eye from the verge or margine of its incloſure, through the gemm unto the oppoſite ſide of its encloſure; and if it conſiſt of two parts with a tinctured foyl betwixt, you will

eaſily

eaſily perceive the upper part to be void of colour, from whence you may gather that it doth receive its glory from the foyl. Such Artificiall angles and corners will jewellers cut and excavate in the bottome of ſoft tranſparent ſtones (as I have ſeen) that by the manifold reflection of theſe lower *ſuperficies*, into every part of the uppermoſt *ſuperficies* of the jewell, a skilfull jeweller ſhall hardly perceive their craft.

There is an adulteration of the *Ruby* with boiled orpement, but theſe are fit for nothing elſe but ſtatues, of this mention is made in *Baptiſta Porta* in his *Magia. lib. de gem.*

Of its Names.

IN Hebrew ברקת *Barakath*, that is, *Carbunculus, vel Pyropus*, the Hebrew word cometh of the verb ברק *barak*, which ſignifieth *fulgurare*, and indeed this ſtone doth caſt forth the glory of its ſplendour and its ſparklings like lightning. Of the Greeks it is called ἄνθραξ from the ſplendour which it hath in its ſelf like unto a fire-coal: hence alſo in Latine it is called *Carbunculus:* it is alſo called *Pyropus*, from the Greek word πῦρ which ſignifieth fire, and *Apyrauſta, quod ignem ſentire non videatur.* In Latine, *Carbunculus.* In Germane, *ein Rubyn.* In Italian, *Un Rubino, Carbunculo.* In French, *eſcar boucle.* In Spaniſh, *el carvoncol piedra.* In Engliſh, *Carbuncle.*

The

The kinds of it.

THere are divers kinds of it as the *Rubine, Granat, Almandine, Red Hyacinth,* which all are to be ſhewed in order as followeth.

Of the places wherein they are found.

THe beſt of theſe are found in the Iſleland called Zeilan, ſome ſmall ones are found in *Coria, Calecut, Cambaya, Biſnager*; there are excellent ones found in the River *Pegu,* the inhabitants there try them with their mouths and tongues: the colder and harder they are, the better they are; they grow in a certain ſtony *matrix* of a roſie colour, which if it be tranſparent is called *Balaſſium Rubinum*; for the moſt part it is found in the ſame mine where the *Saphire* is found: and according to the varietie of its nouriſhment it is found of a mixt colour.

Hoc eſt, *Palatium.*

Boetius ſaith that Rodolphus the ſecond the Emperour had one of the bigneſſe of a ſmall hens egg. *Anſelm. Boetius. p. 72.*

Of its properties.

THis gemm which Ariſtotle calleth *Gnomonem, Sigillum,* and *Gemmarum regulam,* if it be great and very excellent, it doth emulate the bright ſhining of a flame of fire. It is of ſo great luſtre and of ſo excellent a ſplendour, that S. Epiphanius ſaith of it that if it be worn, whatever garments it be covered withall it cannot be hid; this ſpeaketh Andreas Baccius of S. Epiphanius in his book *de natura gemmarum,*

rum, in the chapter of the *Carbuncle*. It is reported of it by Baccius, Boetius, and others, that if it be worn in an *Amulet*, or drunk, it is good against poison, and against the plague, and to drive away sadnesse, evil thoughts, terrible dreams, and evil spirits. It is also said of it, that it cheareth the mind, and keepeth the body in safety, and that if any danger be towards it, it will grow black and obscure, and that being past, return to its former colour again.

Of its Value and dignity.

THis is a gemme that in former times hath been esteemed of very great worth and value for its sacred use, in that it was commanded of God to be set in the ouches of the Breastplate of Judgement, as Exod. 28. 17. If it weigh two scruples which is the greatest, (for seldome any of the excellent ones are found of greater magnitude then a filberd) because of its gratefull colour with which it feedeth the sight; and because of those glorious beams which it seemeth to dart forth of it self, it is esteemed of as great worth as the most excellent *Diamond*. If it be found in the weight of four *Ceratia*, that is, of sixteen grains, it is of the same value with a *Diamond* which weigheth so many *Ceratia*.

The round ones which are of no exact form, are of the least value.

Those that are so big that they may be brought into Tablets, are of the greatest value; according to the value and worth of the best *Diamonds*, so are these to be esteemed and valued, if of equall proportion and weight.

CHAP.

CHAP. III.

Of the Balaſsius or Palatius.

THe *Balaſſe* or *Palatius* is a ſtone of a more dilute redneſſe and fieryneſſe then the *Carbuncle*: it is a ſtone which Martinius Rulandus ſaith flameth with a purple or roſie colour. *Deſcription of the ſtone.*

It is called *Balaſsius* or rather *Palatius*, becauſe it is the matrix, domicile, or palace in which the *Carbuncle* or true *Ruby* is begotten, and reſideth; it is of a much paler and a more dilute colour then the true *Ruby*, but of ſufficient ſplendour, and very gratefull to the eye. It is often found in veins of *Saphire*, by the ceruleous tincture of which, its redneſſe is diluted and tempered. As concerning the manner of the formation, and nutrition, and augmentation of pretious ſtones, Baccius thus ſpeaketh. Every gemm, ſaith he, hath a matrix formed out of ſome ſtone or other, in which matrix, by the diſtilling of a certain nutritive juice it is nouriſhed, even as is the infant *ſanguine materno*, in the mothers womb; after this manner is the *Carbuncle* or *Rubine* generated, nouriſhed, and augmented in the gemm *Palatius* as in its matrix.

Ælianus *in lib. 8. de hiſt. animal.* ſaith, that one of theſe ſtones was the gratefull reward that a ſtork preſented Heraclis withall for curing her fractured thigh: The Stork flying in a dark night by a place where one of theſe ſtones lay flaming like a lamp, took it up and brought it to the woman Heraclis and caſt it into her boſome as a token of the ac- *Hiſtory.*

knowledgement of that favour which it had received from her in the cure of its harm.

The foyls of it.

THe foyls that are uſed for the help of this, are ſuch as muſt have reſpect to the diluted colour wherewith it is tinctured. The adulterations of this ſtone are like thoſe of the *Ruby*.

The place.

THe place in which it is found is the ſame with thoſe.

The kinds of it.

THere are divers kinds of it, ſome as perfect as *Rubies*; and there are ſome of them called *Rubies* of the old rock, but they have the colour of *Rubaſſes*. Some of theſe ſtones are enclining to the colour of a *Hyacinth*, and it is not yet determined whether they be *Spinels* or no: expert jewellers do not take them for *Spinels*, but for *Rubaſſes*, or *Rubicels*, or *Hyacinths*, yet ſome of them are ſo good, as that they are compared to *Spinels*, and ſold for them.

Of its vertues and properties.

THe *Balaßius* or *Pallatius*, is ſuppoſed to be of like vertue with the true *Rubie*, but of a more remiſſe power. Boetius reporteth of it, that it doth reſtrain fury, wrath, and luſt. Rulandus reporteth this of it, as a wonderfull thing; that if the four corners of a houſe, arbor, or vineyard be covered with this ſtone, it will preſerve it from lightning, tempeſts, and worms.

Of its worth and value.

IT is of much leſſe value then the *Ruby*.

Linſhortanus ſaith, that one of the weight of one *Ceratium*, or of four grains, is worth ten ducats.

A *Spinel* of the old rock, of the weight of one *Ceratium*, or four grains, cut into a tablet, is worth half ſo much as a *Diamond* of the ſame weight: if in its own glory and roſie luſtre it be found, and free from blemiſhes.

CHAP. IV.

Of the Rubaces and Rubacells.

IT is doubted whether the *Rubaces* and *Rubacells* belong to the *Spinels* or *Hyacinths*, for they seem to have a mixt colour of both. The *Bohemian Granats* are very like, and they are tried by the fire whether they be *Granats* or no. They will endure the fire without any losse of colour, and with little or no harm; but the other will loose their colour, and so change, that you shall not know whether they be *Granats* or no, and for the most part they have in their extremities a yellowish colour with them.

Their value.

If they be without any fault, they are not above half so much in value as the *Balasses*.

CHAP. V.

Of Granats.

THe *Granats* are kinds of *Carbuncles*: It is a pellucide, red, pretious gemm, like unto the flowers of *Pomegranats*, of a rosie colour, somewhat darker and more obscure then a *Carbuncle*. Boetius saith that it looketh like a flame of fire, or like unto pure vermilion.

Its tincture or foyl.

The foyls for the help of these, by which they are made quick, vivid, and lively, are small reddish bractea,

bracteæ, or silver foyls tinctured with a crimson, which being substrated, and fitly and aptly placed in the inclosure under the gemme, stirre up in it a certain chearfull discovery of lustre.

Of its adulteration.

Impostours have many frauds and deceits for the adulterating of this gemme; which frauds and deceits in the adulteration, together with the great difference of its severall *species*, make this gemme, saith Andreas Baccius, of greater difficultie then any other to be known. So will impostours adulterate this gemme with their *bracteæ* and crimson foyls, as that it is not an easie thing to discover a true *Granate* from their spurious *Rubine*. They have a way also of calcining *Orpment* with a slow fire in any convenient vessel, or a vessel called *Carafetta*, till such time as the vessel seemeth to be covered with certain red drops, like *Rubies*.

Of its names.

It is called in Hebrew אדם, *Adem*, that is, *Rubinus*, as Ezek. 28. 13. the Hebrew word פוך *Puk*, is also taken sometimes for the *Rubine*: but that which for the most part Interpreters do interpret it to be, is *Stibium*, or *gemma Antimonii*, which indeed in colour hath some resemblance with the *Rubine*. In Latine it is called *Granatus*, *Rubinus*, and *Granetus*. In Dutch *Granatlin*, and *ein Granat*. In English *a Granate* or *Rubine*. In Italian *Rubino de Rocha*, and *Granato*.

Of

Of it kinds.

There are three kinds of it; the beſt of which is tinctured with the excellent rednes of a *Pomegranate* flower. The ſecond hath a redneſſe enclining to the colour of a *Jacinth*. The third kind is red, tending to a violet colour, which by the Italians is eſteemed the moſt perfect of all others, and hence they call it *Rubinum de Rocha*.

Plinies hiſtory concerning the Ethiopians wayes of recovering the glory of theſe ſtones.

Plinie relateth of the Ethiopians that they have a way of quickning obſcure and dull *Rubines*, ſo as that they will make them to diſcover their ſplendour and nitour for fourteen moneths together, even like a flaming coal; and that is by macerating of them for fourteen dayes in vineger: But by this means, though their glory be increas'd for a time, they are made ſofter, and more ſubject to a brittle and fragile condition.

The places where they are found.

They are brought from *India*, *Calecut*, *Cananor*, *Cambaia*, from *Balaguar*, and from *Ethiopia*, and *Bohemia*.

Of its properties.

Andr. Baccius, cap. 6. de nat. Gem.

S. Hieroms opinion concerning this is, that it doth illuminate the heart to contemplate true and divine things. Its declining from glory to obſcuritie, doth prognoſticate ſome misfortune; as appeareth by this which Andreas Baccius ſpeaketh of a *Rubine* of his encloſed in a gold ring. On the fifth of December 1600, he was travelling with his wife Catharina A-

Hiſtoric.

delmania

delmania to *Studgard*, and in his travell he obſerved his *Rubine* to change its glory into obſcuritie, whereupon he told his wife, and prognoſticated that evil thereupon would enſue either to himſelf, or her, which accordingly did: for not many dayes after his wife was taken with a mortall diſeaſe, aud died: after which he ſaith his *Rubine* of its own accord did again recover its former luſtre, glory, beauty, and ſplendour.

The value, dignitie, and worth of them.

The *Bohemian* ones are worth twenty ſhillings a piece: and if they be found bigger then ordinary, the price of them is increas'd.

It is reported of Rodolphus the Emperour, that he had one of the bigneſſe of a filberd.

The beſt orientall ones of the weight of foure grains, are worth two crowns; and by how many times ſoever they are found to be double in weight, ſo many times double will their value and worth amount, and raiſe their price; as if they weigh eight grains, they are worth foure crowns, and ſo proportionably according to their greater weight, great will be the increaſe of their value and worth, but with this proviſo, that their colour for their glory, be alwayes the perfect colour of a *Rubine:* for it is the pure excellencie of its colour and tincture that determineth its price.

The *Rubine de la' Rocha*, is of the ſame price with the *Spinels*.

CHAP. VI.

Of the Almandine.

Description of the stone.

THe *Almandine* is betwixt a *Granate* and a *Rubine*: so that the *Rubines* seem to be tinctured with a more black colour; they are of lesse value then *Rubines*, and of lesse esteem, and of lesse vertues. In times past they were called *Alabandicks*.

They are of the value of orientall *Granats*.

These are those stones that Pliny calleth *Troezenii*. They are red, with divers colours severed with white spots. This jewell is known to very few, and therefore scarce of any price.

CHAP. VII.

Of the Hyacinth.

Description of the stone.

THe *Jacinth* or *Hyacinth* is a stone (as saith Boetius and Rulandus) which is red, with a certain yellownesse, or *rufescit in auro*, that is, it is red in a yellow. It doth resemble a flame of fire, and may be referred to the kinds of *Carbuncles*. This appeareth to be a true discovery of the perfect *Jacinth*, by this testimonie of holy Writ, which describing the breast-plates of the Locusts or horsemen which destroyed the third part of men, doth in plain terms say, that their breast-plates were of fire, of *Jacinth*, of brimstone, which in colour are all one and the same. Rev. 9. 17. Plinie saith that these are seldome found bigger then a pease. Boetius saith that he saw one a great deal bigger, of a very excellent lustre.

Wurt-

Wurtzung in his second table of his generall practise, saith, that the *Jacinth* is a pretious stone of a light violet colour, and this he saith from Plinie, who maketh the *Jacinth* to be like the *Amethyst*.

Of its foyl or tincture.

The foyl or tincture of this may be either of leaf gold, or silver fitly tinctured, and aptly placed to commend its lustre.

Of its adulteration.

Impostours do adulterate it by a kind of glasse made of lead; but this will be easily known upon triall with a true *Jacinth*: for it will be softer and lighter then the true jewel is. But of so low a price are ordinary *Jacinths*, that very few will attempt the adulterating of this jewel.

Of its names.

It is called in Hebrew תכלת *Techeleth*, as Exod. 26. 36. it doth appeare, where the hangings for the doore of the tent, are commanded to be made of the colour of a *Hyacinth*, as there it doth appeare by the translation of the Hebrew word *Techeleth*, *Hyacinthinum*. In Greek this stone is called ὑάκινθος, in Latine *Hyacinthus*, in English both *Hyacinth* and *Jacinth*, in Dutch *ein Hyacinth*, and *ein brennender Jacinth*; in French *Jacinth la' belle*.

Of its kinds.

Albertus Magnus maketh two kinds of it, one

kind which doth *albescere in flavo*, or which is white in a yellow; the other kind which doth *aquescere in rubeo*, or appeareth waterish in a red.

Boetius speaketh of these kinds of it:

1. There are some that flame like fire, or are like in colour to crimson, or to naturall Vermilion, these the French jewellers call *Facincte la' belle*. These they esteem the best, and they may be referred to the kinds of *Carbuncles*.

2. Such as are like to *Stibium*, with a yellow red colour.

3. Others which are like unto *Amber*, so that they can hardly be distinguish'd from it, but by their hardnesse. Such an one Anselmus Boetius saith he had. These are of no great value, by reason of the atomes which they do contain, and the multiplicitie of small bodies which are in them, which do hinder their transparencie and diaphanity. One of these Cardanus saith he was wont to wear about him, to the intent of procuring sleep; to which purpose he saith it did seem somewhat to conferre, but not much. This hath been by some taken for the *Amber*: but Boetius saith, that he thinketh these rather to be the *Lyncurius* of the Ancients, then *Succinum* or *Amber*: for saith he, it is scarce credible that the Ancients should take *Succinum*, a thing so subject to the injuries of the fire, by reason of its softnesse, for a pretious stone.

Card. de subtil. l. 7. pag. 339.

4. There is a fourth kind which have no redneſſe at all in them, which are like to white pellucid *Amber*, and these are of least value.

Those stones which Plinie called the *Hyacinth*, are in these dayes taken for kinds of *Amethysts*; as now also

alſo the *Amethyſt* of the Ancients is called a *Granate.*

Martinus Rulandus maketh five kinds of it:

1. *Hyacinthus qui in auro rufeſcit.*
2. *Hyacinthus aurei coloris.*
3. *Hyacinthus ad Electri colorem declinans.*
4. *Hyacinthus ſcaber.* and
5. *Hyacinthus adulterinus, factitius, tinctura adhibita.*

Of the places where they are found.

They are found in *Ethiopia, India, Arabia.* The *Arabs* make three kinds of it; as 1. *Rubri coloris.* 2. *Citrini coloris.* 3. *Antimonii coloris.*

The worſt of the kinds is found in the river *Iſera,* which is upon the confines of *Sileſia,* and *Bohemia.*

The beſt and moſt excellent ones are brought from *Cananor, Calecut,* and *Cambaia.*

Of its properties.

It is of a cold and dry nature, ſaith Renodeus, *in lib. de re Medica.* Cardanus in his book *de lapidibus pretioſis,* ſaith, that it is endued with a power and faculty of procuring ſleep, of chearing the heart, of driving away plagues, of ſecuring from thunder, and of increaſing riches, honour, and wiſdome, &c. being worn in a ring on the finger, or about the neck as an amulet.

The laſt kinds are of no great value.

Of the dignities and value.

The firſt, ſecond, and third of theſe kinds of *Ja-*

cinths are of great value, worth, and dignity; becauſe they have been of ſacred uſe, as appeareth by the twenty eighth chapter of Exodus, and becauſe many things by them are diſcovered to us in holy writ, as appeareth in the book of the Revelations, chap. 9. and chap. 21.

The fourth kind, by reaſon of the many atomes and ſmall bodies which they do contain, though they be big enough for ſculpture and engraving, yet are of little value, and will ſcarce quit the coſt of engraving; whereas the glory and luſtre of the other, together with the ſacred uſe which hath been made of them, make them of great value, high price, and much worth.

CHAP. VIII.

Of the Amethyſt.

Deſcription of the ſtone.

THe *Amethyſt* is a gemm of a peach-bloom colour: which pleaſing delightfull colour, proceedeth from a mixture of red and blew, which is a dilute dark colour. Pliny ſporting in his naturall Hiſtory about this ſtone, ſaith that it doth draw nigh to the colour of wine, but it durſt not taſt it, that is, it taketh but very little of it: for before it doth throughly reliſh it, its glory doth end in a very delightfull pleaſing ſparkling violet colour: the moſt excellent of them have in them a glorious fiery brightneſſe, which doth moſt excellently and pleaſingly dart its ſelf forth (as I have obſerved in one which I was once maſter of) through the tranſparent cloud of a skie colour, from the mixture of

of its redneſſe, brightneſſe, or fiery ſplendour with this skie colour, ariſeth all the glorious delight of its pleaſing tincture.

Of its foyl or tincture.

Its foyl is a foyl of maſtick, or a ſilver foyl dilutely tinctured, and then fitly ſubſtrate under the gemm, in either ouch or ring.

Of its adulteration.

The excellent *Amethyſts* are of very high value, and of great worth and dignity, comparable to orientall *Diamonds* of the ſame proportion, weight, or bigneſſe; and therefore no doubt need to be made of it, but that impoſtours will very much ſtudy and labour to counterfeit and adulterate this ſtone. Some will adulterate it with a violet colour mixt with maſtick, or with a foyl thus tinctured, & placed betwixt two Cryſtals, or betwixt two of any other tranſparent, perſpicuous, diaphanous ſtones.

Of its names.

In Hebrew אחלמה *Ahlamah*, as Exod. 28.19. It is called *Ahlamah*, of חלם *ſomniare*, becauſe it is ſaid *inducere ſomnia geſtantibus*; as Rabbi Aben Ezra doth write of it: and in the Caldean tongue *Enegla*. In Greek ἀμέθυστος, *quaſi ebrietatem arceret*, as if it had a power and faculty of driving away drunkenneſſe. In Latine, it is called *Amethyſtus*. In Engliſh, *Amethyſt*. In Dutch, *ein Amethyſt*. Divers other names it hath from the places in which it is found.

of

Of its kinds.

There are divers kinds of it: the beſt of which, are thoſe that have a roſie colour ſhining in a purple. Theſe are glorious as a *Carbuncle*, in reſpect of their beauty, and of their excellent hardneſſe, and becauſe they being thus hard, may be converted into a *Diamond* of the greateſt value, and as truly worth eſteem, and high price, being of equall bigneſſe, as the beſt orientall *Diamond* in the whole world.

Anſelmus Boetius ſaith, that he ſaw one of theſe orientall *Amethyſts* ſo converted into an excellent *Diamond*, as that it being ſet in a gold ring it was comparable without any difference, to a *Diamond* which he ſaw that was ſold for 18000 *Aureos* or crowns: it being of the ſame bigneſſe and form, and after the ſame manner encloſed in a gold ring. The waters (which it hath that are very like to thoſe of the *Diamond*) as the jewellers call them, which it doth caſt forth of it ſelf in pleaſing rayes and glorious ſparkles, maketh this ſtone to be of ſo great value, and of ſo incomparable eſteem and worth, as is the beſt orientall *Diamond* of the ſame bigneſſe, weight and form.

The way that jewellers have to whiten theſe excellent gemms, is the ſame with that of the *Saphire*.

1. The beſt kind is called an Indian one.
2. Kind the Indians call *Socodion*.
3. Kind which is more dilute, is called *Sapinor* and *Paranitor*.
4. Kind is of the colour of wine.
5. Kind have ſome vicinity with *Cryſtall*, ſome of

of which are called *Poderotæ*, others *Anterotæ*.

Martinus Rulandus reckoneth six kinds of *Amethysts*.

1. One kind which is found in the mine of *Undehenstein*, and is called in Dutch, *ein Misnischer Amethyst, der in bergen bricht*.

2. A *Misnian*, one which is found in the river of *Misnia* neare *Stolpen*, and in the river *Trebisa* neare *Misen*.

3. Bohemian ones, which are found in the mountains of Bohemia.

4. A fourth kind which descendeth to the form of *Crystall*.

5. A kind which is distinguished with Crystall lines.

6. And a sixth kind of a Quadrangular and sexangular form.

Of the places where it is found.

It is found in *India*, *Arabia*, *Armenia*, *Æthiopia*, in *Galatia*, *Thasa*, and *Cyprus*. The orientall ones are the best of all others.

There are also *Amethysts* found in *Germany*, in *Bohemia*, in *Misnia*, also in *Wolkenstein*, and *Hohenstein* very fair ones, but soft like *Crystall*, and therefore not of so great worth, value, and esteem as the others which are orientall ones.

Of its properties.

It is reported to be good to drive away ebriety, which the etymologie of the Greek word ἀμέθυστος doth also seem to import. Aristotle saith of it, that

it being applyed to the navell, or worn about the navell, it will hinder the aſcenſion of vapours: the reaſon of it he giveth to be this, viz. That it draweth the vapours to it ſelf and doth then diſcuſſe them.

Andreas Baccius in his eleventh chapter *de Natura gemmarum* ſaith, that it ſharpeneth the wit, and diminiſheth ſleep; and that it is alſo thought good for the reſiſting of poyſon. With thoſe that have a vicinity with *Cryſtall*, the Turkiſh women are wont to adorn themſelves, they being firſt poliſhed at Venice, and brought thence to them to Conſtantinople.

Of its dignity, worth and value.

It is of great eſteem and dignity. Firſt, becauſe it hath been of ſacred uſe; This was one of the ſtones of the breaſt-plate of Judgement, as appeareth Exod. chap. 28.

Secondly, as in the book of the Revelations, ſome of the glory of the foundations of the walls of the new Jeruſalem is diſcovered to us by it, Rev. 21.

Thirdly, as it is of excellent glory and beauty in it ſelf, and ſo very delightfull to the eye.

The orientall ones, if they be hard without clouds and blemiſhes, though they weigh but four grains a peice, they are worth many pounds a peice; and as oft as theſe are double in weight, ſo oft is their price to be doubled: others are not ſo valuable.

The beſt are worth as much as the beſt orientall *Diamond* of the ſame weight.

CHAP.

CHAP. IX.

Of the Margarites and Unions, or Pearl.

THe *Margarite* or *Union* is nothing else but the excellent geniture of a shell-fish called *Margaritifer*, congealed into a very fair, transparent, diaphanous, beautifull stone, which is the *partus* and birth of this fish. *Description of the stone.*

As concerning their originall and conception, there is some difference amongst Authours, as betwixt Pliny and Anselmus Boetius, and betwixt them and Cardanus.

Pliny saith that they are conceived in oysters of a certain maritime dew which these fish (and so likewise Scallops) do at time of the yeare much thirst after; and according as the heavens are more cloudy or clear in the time of their taking in of this dew, so they are generated, more fair, or more obscure, as may be read in his book, where he speaketh of the nature of those Pearls which are called *Unions*, and of the shell-fish in which they are found; as *lib. 9. c.* 28. But this opinion of Pliny concerning their conception, is by Anselmus Boetius thought not to be consentaneous to the truth; for saith he, I have taken out of these shell-fish many *Margarites*, and they are generated in the body of the creature, of the same humour of which the shell is formed; which viscuous humour is expelled sometimes, not alwayes, for the fabrick of another shell: for whenever this little creature is sick or ill, and hath not

ſtrength enough to belch up, or to expell this humour which ſticketh in its body, it becometh the rudiments or beginnings of *Margarites*; to which, new humour being often added and aſſimulated into the nature of *Margarites*, of this new addition of humour, by concretion and congelation, is begotten a new film or skinne to the firſt rudiments of *Margarites*, of which at length by further additions of humour, is generated an *Union* or *Pearl*: even as ſtones are generated in the gall, or bladder of a man, and after the ſame manner that the Bezar ſtone is generated in the Indian Goat.

Cardanus *lib.* 7. *de lapidibus* ſaith, it is a fabulous thing that *Pearls* ſhould be generated of the dew of heaven, ſeeing that the ſhell-fiſhes in which they are conceived, have their reſidence in the very bottome of the depths of the ſea. That which is reported of them that they are ſoft in the waters, and grow hard like Corall as ſoon as they are taken out of it, is not true, ſaith Boetius *p.* 84.

Of its Adulteration.

Unions are ſo much the more eſteemed, becauſe they cannot eaſily be adulterated. There are factitious jewels made of double glaſſe which being ſet in gold, jewellers cannot diſcern from *Pearl*, except they take them out.

Some will adulterate them with the powder of the ſhell of the *Margarite*; and others with chalk covered over with leaves of ſilver, and then anointed with the white of an egg.

Some adulterate them with the powder of *Margarites*,

garites, mixt with the white of an egge, and dried, and then polished, but these will easily be discovered from the true by the weight and colour.

Of its Names.

The Union is in Hebrew called גביש, as Job 28.28. and so the word *Gabish* is interpreted by Rabbi Levi Gerson. It is also taken for *Margarita.* פנינים is by some taken for *Margaritæ*, but in the Proverbs it is interpreted by Junius, *Carbunculi*; as Proverbs 8.11. If they be great, they are called *Unions*, because they are then found single in a shell. If they be small, they are called *Margarites*, many of which may be found in one shell together. In Greek, they are called μάργαρος, μαργαείτης & νίτακος. In Latine, the great *Pearls* are called *Uniones*, and *Margaritæ simpliciter:* Lucian calleth the *Pearle*, *Lapis Erythreus:* Arrianus, *Lapis Indicus:* Statius, *Erythreus lapillus:* Virgil, *bacca & bacca Conchea:* Pliny, *Unio:* Cicero, *Margarita:* S. Jerome, *Granum Maris Rubri:* and others call it *Perla.* The Germans call it *Perlin.* In Italian, *Perle.* In Arabick and Persian, *Lulu.* The Indians call them *Moti.* In Malavar it is called *Mutu.* The Lusitanians call it *Aliofar*, which in Arabick soundeth as much as *de Lulfar*, that is, *portus in mare Persico*, where the most excellent *Pearls* are generated.

Of the kinds of Pearl.

The kinds of *Pearl* are no otherwise distinguished, but either first from their greatnesse, or littlenesse; that is, either as they are *Unions*, or as they are

Margarits, or ſeed *Pearl*: or ſecondly, as they are of excellent beauty, purity, and glory; or cloudy, reddiſh, and ſo leſſe beautifull.

The Places.

The beſt are found in the Perſian Gulf, betwixt the iſland of *Ormus* and the *Baſſoram*, that is, about *Baroyn*, *Catyfa*, *Fulfa*, and *Camaron*, and are thence brought into the Iſland of *Ormus*. For the excellent beauty of theſe it may very well be ſaid of them, that

If all the world were but one ring,
Ormus ſhould the Union bring.

They are alſo found betwixt the Promontory of *Comorin* and the iſland of *Zeilan*; but theſe are not to be compared with thePerſian ones. There are of them in the iſland of *Taprobane*, now called *Sumatra*. Betwixt the greater *Javan* and *India* there are very many. In *Palane* and *Caralco* a Promontory of *India*, there are many, but very ſmall. In *Borneo* and *Ainon* here are great ones. The Occidentall ones are of a milkiſh colour, and of a ſilver-like ſplendour, and therefore not ſo commendable as the Orientall ones. It is reported by ſome, that by how much in the more deep ſeas the ſhell-fiſh reſide, ſo much the leſſe *Margarits* they do produce.

The Indians call the lighter, candid, or ſplendid ſhel-fiſh *Cheripo*, which is a kind of Oyſter, of which they do make ſpoons and little cups. Theſe little fiſhes do generate excellent *Margarites* or ſeed *Pearl*. There are others which they call *Chanquo*, the ſhells

of

of these are the mother of *Pearl*: These generate not so fair *pearl* as the other; because their shells are very smooth and fair within; they are used to adorn tables and other things with them. These are brought to *Bengala* for bracelets and other uses. The custome there was, to have the virgins arms adorned with bracelets of this kind, lest they should be corrupted.

They are also found in many places of *Europe*; As in *Scotland* and *Ireland* there have been very excellent ones found in *Scallops*, and common oysters; And in *Silesia*, *Frisia*, and *Bohemia*.

About the Promontory of *Comorin*, they are found of the weight of an hundred grains of wheat. And neare the Iland of *Borneo* in the weight of 160 corns of wheat, though not so fair as the other.

It is reported of *Cleopatra* Queen of *Egypt*, that she drank one dissolved at a supper, of which draught she boasted, that she had a more costly supper then ever Antonius had: The value of which draught must then amount (according to the computation of *Budeus*) to an hundred and fifty thousand *aureos*; Thus much did one supper of Antonius stand in, as Plinie, *lib. 9 c. 35.* and Macrob. *3. Saturnal. c. 27.* The same *Budeus* doth commemorate an *Union* of the bigness of a filberd, which was bought in *France* for three thousand *aureos*, and another for foure thousand.

Of its properties.

Solinus c. 56. Serap. lib. aggreg. c. Hager. Albalo; say

ſay that theſe ſtones are cold and dry in the ſecond degree; and that they are good againſt Syncopes, and cardiacall paſſions, that they do comfort the ſpirits, ſtop fluxes of bloud, cure Lienteries, and Diarrheas, and that they are good for the ſight: The ſame ſay Cardanus, Rulandus, and Baccius in their books *de Gemmis*.

Of their dignitie and value.

They are of great worth for their ſacred uſe. S. Auguſtine in his explication of the Pſalmes, ſpeaking of the twelve ſtones mentioned in the book of the Revelations (Revel. 21. 21.) and of the gates of the New Jeruſalem which were every one of one pearl, ſaith, that the twelve Apoſtles are ſignified by the twelve ſtones, and Chriſt, the ſpotleſſe lambe, by the pearls.

Their own glory, beauty, and excellencie amount their worth: If they be of the weight of foure grains a piece, fair, and round, they are worth three crowns a piece, Boetius p. 88. So according to their bigneſſe, weight, roundneſſe, and fairneſſe, their price is raiſed, doubled, and trebled.

CHAP. X.

CHAP. X,

Of the Saphire.

THe *Saphire* is a tranſparent ſtone, of a sky-colour, pretious, and very delightfull to the eye. The herb *Piloſella* or *Mouſe-eare* in its flower, and the herb *Scorpoides* in its flower, have ſome reſemblance of its beauty. Cardanus maketh this ſtone to be the fifth in order of the moſt noble gemms, in his book *de ſubtilitatibus*; where he likewiſe ſaith, that it is a ſtone of an excellent hardneſſe, of a ceruleous colour, and if not dilute or vitious, very pleaſing to the eie; in ſo much as he ſaith, that nothing doth ſo much recreate the ſight, as the *Smaragde* and the *Saphire*. *Deſcription of the ſtone.* *Card. de Lap. lib. 7.*

Of its foyl or tincture.

The foyl for this is either a ſilver foyl tinctured for this purpoſe, or thin glaſſe or *iethyocolla*, that is, yſeing-glaſſe, brought into the form of a very thin foyl, and then being tinctured accordingly, it is placed in the encloſure under this gemme to ſet off its beauty.

Of its adulteration.

Impoſtours are wont to adulterate it with two *Bohemian Diamonds*, and a thin sky-coloured glaſſe betwixt them: and ſometimes after this manner;

R. two drachms of *Zaphura*, or of *lapis Lazuli*, put it to a pound of the glaſſie ſubſtance which is

made of *Cryſtall* and *Flint-ſtones*; and they being molten together in a ſtrong calcining pot, ſtirre them well with an iron hook; then take out a little of this molten ſubſtance, and ſee whether it doth not want more of the *Zaphura* or *lapidis Lazuli*; or whether there be any need to adde more of the glaſſie ſubſtance: If there be no need of either of them, but that it hath its perfect colour, then let it be ſet into a fornace of fire for ſix houres, and afterwards take forth the maſſe, and let it be well poliſht; and if this lump be well ordered, this factitious gemme will hardly be diſtinguiſht from a true *Saphire*. But theſe factitious gemms are uſually full of little bubbles and atomes, by reaſon of the inequalitie of the fire working upon the matter; and thus may they be diſtinguiſht from the true *Saphires*.

Of its names.

The *Saphire* is known almoſt to all nations by this one name *Sapphirus*. In Hebrew it is called סַפִּיר, as Exod. 28. 18. and not onely in Hebrew, but in Greek Σάπφειρος, and in Latine it is called *Sapphirus*; in Engliſh *Saphire*; and in Germane *ein Saphire*; in Italian *Zaffiro*; in French *Sapphyr*; in Spaniſh *el Zuffir piedrá pretioſa*; in Indian language and Arabick *Nilaa*; and from the place where it groweth *Podia*. Marbodeus doth call it *Syrtites*.

Of its kinds.

There are foure kinds of *Saphires* ſpoken of by ſome

ſome writers. The firſt of which is the beſt. Of all others of the kinds this doth onely truly deſerve the name of a *Saphire* to diſtinguiſh this from all other *Saphires* it is called *Sapphirus cæruleus*: Dionyſius Afer calleth it for this purpoſe *Cyaneus Sapphirus*, as ſaith Wurtzung, in 2, *tab.* of his generall practiſe of Phyſick. The beſt *Saphire* Andreas Baccius (*lib. de nat. gem. c.* 7.) doth thus deſcribe; If it have an excellent tenour in it ſelf, that is, if it be neither too obtuſe or dull, by reaſon of the groſſneſſe of that *Succus*, juyce, or nouriſhment of which it was generated; nor too much dejected with a propenſe perſpicuitie; but doth pleaſantly diſcover from it ſelf, by reaſon of the mixture of light and purple, the delightfull flower of a sky-colour. This is the excellent *Saphire*, which in the order of noble gemms Cardanus doth rank in the fifth place.

2. The ſecond kind declineth from the blue to a green, and is in Greek called *Praſitis*, and *Sapphirus Praſitis*, and *Sapphirus viridis*, by this name it is known to the Druggiſts. *Wurtz. tab. 2. gener. pract.*

3. The third kind declineth from the blue to the yellow, and is called in Greek *Chryſitis*, and *Sapphirus Chryſitis*. The Simpliciſts do call it *Sapphirus Aureus*: In Engliſh this is called *the yellow Saphire*. This is a gemme that doth ſhine with golden ſpecks and ſpots, as ſaith Dioſcorides, and Plinie *lib.* 37. *c.* 9.

4. The fourth kind is between blue and white, it is in colour like skimmed milk, very perſpicuous and clear; and this is that gemm which is called *Sapphirus candidus*, or the *white Saphire*.

Theſe are many times ſubſtituted for *Diamonds*:

and they are called the female *Saphires*, the other the male. That ſtone which Pliny doth in ſome place call the *Saphire*, is the *Cyanus* or *Lapis Lazuli*.

The places.

They are found in *Calecut*, *Cananor*, and in the kingdome of *Biſnager*; in *Zeilan*, in the kingdome of *Pegu*, and in the Eaſtern Countreys: there are alſo of theſe ſtones found in the Weſtern Countreys, as in *Bohemia*; and very good ones in *Sileſia*: in theſe parts there are of theſe ſtones found very tranſparent, but ſoft, of a milkiſh colour mixt with a blew, and they are called *Leucoſaphirus*, theſe are ſubject to many harms.

The beſt are ſo hard that they cannot be filed, the colour of theſe *Saphires* may ſo be taken away, as that they may be converted into a very excellent *Diamond*.

Of its faculties and properties.

The *Saphire* is of a cold and drie faculty, even as are moſt pretious ſtones: it is reported of it, that it is good againſt feveriſh diſtempers, hence this old diſtick.

Corporis ardorem refrigerat interiorem
Sapphirus, & Cypriæ languida vota facit.

The beſt of theſe are very comfortable to the eyes, if they be often looked one. It is reported of it, that if it be worn by an adulterer, by looſing its ſplendour it will diſcover his adultery: and that the wearing of it, doth hinder the erections that are cauſed by Venus. But ſurely, as either luſtfull thoughts,

thoughts, or this wicked ſpirit *Aſmodeus* moving them, or ſtirring up ſuch diſorders and irregularities without them, in the body, are the cauſes of ſuch undue erections of the fleſh: ſo when he withdraweth himſelf, this ſtone hath power to hinder them, and not before. Many have written of the faculties of this ſtone; as Galen, Dioſcorides, Cardanus, Garcias, and Macer the Poet, *lib.* 5. *c.* 5.

It is reported of it, that it is of ſo contrary a nature to poyſons, that if it be put into a glaſſe with a Spider, or laid upon the mouth of the glaſſe where the Spider is, the Spider will quickly die. And that it keepeth men chaſte, and therefore is worn of Prieſts.

Anſelmus Boetius ſaith, that S. Jerome affirmeth in his expoſition of the 19. chap. of Iſaiah, that the *Saphire* being worn of any man, procureth him favour with Princes, and with all men; pacifieth his enemies, freeth him from inchantments, and from bonds, and impriſonments, and that it looſeth men out of priſon, and aſſwageth the wrath of God. (Anſelmus Boetius *p.* 49.)

Of its dignity and value.

For its ſacred uſe it hath been eſteemed of great worth, as Exod. 28. 18. And for its ſuperſtitions, take this caution, uſe it with much circumſpection. Amongſt the Ancients, and with the Heathen, this gemm hath been of very great authority, becauſe they thought it did not a little prevail with God. *The Gentiles conſecrated this gemm to Apollo, becauſe

*Andr. Bacc. cap. 7. de gem. nat.

Vide Andræ. Bacc. c. 7. de Nat. Gem.

becauſe in their enquiries at his oracle, if they had the preſence of this gemm with them, they imagined they had their anſwer the ſooner.

It is deſired of many for its excellent beauty; for it is fair like unto a ſerene skie: No better a deſcription of its excellent beauty can you find, then that which is given of it, Exodus 24.9, 10. Where it is ſpoken after the manner of men (not as if the children of Iſrael ſaw any appearance of God in the form of man) That the children of Iſrael ſaw the God of Iſrael: and there was under his feet, as it were a paved work of *Saphire* ſtone, and as it were the body of heaven in its clearneſſe.

This ſtone is valued according to the excellency of its colour, beauty, purity, and greatneſſe: one of the weight of four grains is worth many crowns. The beſt of theſe are as much worth as a *Diamond* of the ſame bigneſſe.

CHAP. XI.

Of the Opalus.

Deſcription of the ſtone.

THe *Opalus* is a pretious ſtone which hath in it the bright fiery flame of a *Carbuncle*, the pure refulgent purple of an *Amethyſt*, and a whole ſea of the *Emeraulds* ſpring glory, or vireſcency, and every one of them ſhining with an incredible mixture, and very much pleaſure: ſo that this cannot eaſily be counterfeited or adulterated as other jewels may. Boetius ſaith of it, that it is the faireſt and moſt pleaſing of all other jewels, by reaſon of its various colours. Cardanus ſaith that he bought

bought one for 15 crowns, that he took as much pleasure in, as he could do in a *Diamond* of 500 *aureos*. *Cardan. de Subt. l. 7.*

In many of these stones do appear Skie-colour, Purple, Green, Yellow, Red, and sometimes a Black and White or Milkish colour: but we must not think that all these colours are severally in the jewell, for break but the *Opalus*, and all the variety of colours do perish; by which it doth appear that the variety of colours in the *Opalus*, ariseth from the reflection of one or more colours; as sometimes is seen in the Rain-bow, and may be experienced in a triangular *Crystall*, where the alone reflection of the light upon the angles, or corners of the *Crystall*, do in the *Crystall* produce various colours, which otherwise is diaphanous, perfectly transparent, clear, and without colour.

Of its foyl or tincture.

Though the gemm be a transparent gemm, yet there can be no foyl for the setting of it off, for the variety of colours in the foyl, would cause a confusion in the various colours of the *Opalus*.

Of its adulteration.

Though a foyl can hardly be usefull in the setting off of the true jewell; yet by other stones it cannot be counterfeited, imitated, or adulterated, but by the help of a foyl; Impostours can adulterate it with a double glasse tinctured, or coloured, or with a convenient tinctured foyl betwixt them, or with two *Crystals*,

Cryſtals, or other diaphanous ſtones joyned together with a convenient foyl.

Baptiſta Porta ſaith, that if the *Calx* of tinne be caſt into molten Cryſtall glaſſe, it will cloud it, and colour it like an *Opalus*. Quercitanus ſaith, that the ſpirit of *Nitrum* will colour a glaſſe alembick with variety of colours, like unto an *Opalus*; as appeareth by his book called *Priſcorum Philoſophorum vera medicina.*

Of its names.

It is known of jewellers that are moſt expert, by the name of *Opalus*. In Engliſh it is ſo called. The Italians call it *Giraſole* and *Scambaia.*

The kinds of it.

There are four kinds of it, The firſt kind of it, doth imitate red, green, skie-colour, and purple; and ſometimes purple with a yellow colour, and theſe are the beſt of all other: Theſe are known by their *Carbuncle* flame, by their *Amethyſt* ſplendour, and by their *Emerauld* viridity, all ſhining together with an incredible mixture, and by their admirable and wonderfull ponderoſity: for this is a gemm that though it be ſeldome found bigger for magnitude then a bean, and for the moſt part of leſſe bigneſſe, yet its weight will be incredible, as appeareth by this of Cardanus, who ſpeaketh of one of theſe ſtones that was ſhorter then a bean and not thicker, that weighed *duos denarios,* that is ſaith he, almoſt fifty grains of wheat; the beſt are hardeſt, the other are ſofter: the cauſe of its wonderfull pro-

Card. de ſubtil. l. 7. pag. 349.

propriety

prietie, and of its various delightfull colours, Cardanus saith is this, because the stone is crisp, and of some pervious parts: by those parts which are not pervious or porous it doth receive the light, and returneth it; and by this means it cometh to passe that it hath a white snowy brightnesse and splendour: contrariwise, by a contrary conversion it doth receive the light, but not return it: and hence it is that the stone appeareth dark, obscure, and of a brown colour. *Vide Card. lib. de lap.*

2. The second kind is black, and doth out of its blackness send forth as it were a flame. This is very pleasant, very rare, and very pretious. Boetius saith, that he hath seen of this kind of the bigness of the greater sort of pease.

The third kind hath various colours, but in a yellow body, and they seem to be quiet, lie still, and not to range; and therefore they do not so exactly feed the eyes with the reflexion of their rayes. These three kinds are brought out of *Hungaria*.

To this last kind there is another with a milkish colour that may be referred, and the Italians do call it *Occhio del garto, oculus cati*, or the *cats eye:* and of some it is called *Pseudopalus*, or the *Bastard Opalus*.

4. The fourth kind is also called *Pseudopalus:* it is notably diaphanous like unto fish eyes, and it hath in it a little milkish sky-colour, or somewhat of a yellow colour. The Germanes call this *Wehse*, the Italians *Girasole:* some call it *Astroites* and *Asteria*, because it doth include within it self a light, walking like a starre.

The places.

India is the mother of theſe gemms: they are found alſo in *Cyprus*, *Egypt*, *Arabia*, *Galatia*, *Thaſo*, *Hungary*, *Pontus*. The *Hungarian* ones are found in a ſoft ſtone, diſtinguiſht with black, yellow, and brown veins, and the body of the ſtone is whitiſh, yellowiſh, and blackiſh, and ſometimes perſpicuous with divers colours. Many of theſe are ſo ſoft that they will not endure poliſhing, no not upon tinne or lead, but onely upon a ſoft *Tripolitan* earth. Boetius 98.

Its vertues.

It is reported of this ſtone, that it ſharpeneth the ſight of the poſſeſſours of it, and cloudeth the eyes of thoſe that ſtand about him, ſo that they can either not ſee, or not mind what is done before them: for this cauſe it is aſſerted to be a ſafe patron of thieves and thefts; as it is related *in Lapidario*.

Its value.

Hiſtory. Amongſt the Romanes it was in great requeſt: for it is reported of Nonius a Senatour, that he had rather have been deprived of his countrey and Senatour-ſhip, then part with an *Opalus* which he had from Antonius. This *Opalus* of Nonius was of the bigneſſe of a filberd, and eſteemed at twenty thouſand *aureos*. Boetius ſaith, he ſaw one of the bigneſſe of a walnut, perſpicuous, with various colours, and milkiſh, which was valued at 200 crowns. Their price

price and esteem is not great in these dayes: for one of foure grains weight of the first and best kind, is scarce worth three crowns: the other have their value according to their bigness and beauty.

CHAP. XII.

Of the Emerauld or Smaragde.

THe *Emerauld* is a pretious stone or gemme of so excellent a viridity, or spring-colour, as that if a man shall look upon an *Emerauld* by a pleasant green meadow, it will be more amiable then the meadow, and overcome the meadows glorie, by the glory of that spring of viriditie which it hath in its self: The largeness of the meadow it will overcome with the amplitude of its glory, wherewith farre above its greatness it doth feed the eie: and the virescencie of the meadow it will overcome with the brightness of its glory, which in it self seemeth to embrace the glorious viridity of many springs. This stone is known by its apparent coldness in the mouth, by its gravity being weighed: and in this, that being cast into a fire, it will not burn, nor send forth any flame; and that in the brightness of the Sunne, it will keep its excellent viridity and greenness. *Description of the stone.*

Of its foyl or tincture.

The *Emerauld* is a transparent stone, and therefore may be substrate with a convenient foyl.

Of its adulteration.

There are many wayes which impoſtours uſe to adulterate this gemm; as with *Cryſtall*, glaſſe, and flints calcined and melted together; and then a ſmall quantitie of *minium* or red lead being added.

Others take *æs uſtum* finely powdered, and half ſo much *crocus Martis*; theſe they ſet in a furnace of fire for the ſpace of ſix hours, that they may be melted together; then they let the veſſel cool, and afterwards they take out the jewell and poliſh it. And if this be rightly done, this jewell will be very like to the *American Emeraulds*.

Of its names.

In Hebrew it is called נפך־כוש, that is, *Topazius Æthiopicus*, Job. 28. 19. and נפך and ברקת that is, *Topazius* or *Smaragdus*, as Exod. 28. 19. which is rendered by Caldeus *lapidem viridem*, and known amongſt us by the name of the *Emerauld*. In Greek Σμαράγδος, and in Latine it is called *Smaragdus*, by which name Iſiodorus in his book of etymologies of names, ſaith it is called from its viridity, and excellent greenneſſe: or it may be ſo called from its ſplendencie and luſtre. Is is alſo in Greek called *Praſsinus*, becauſe of the reſemblance of the greenneſſe of leeks which is in it. Epiphanius ſaith it is called *Neronianus* and *Domitianus*. It is ſuppoſed to have the name *Neronianus*, from him that invented the uſe of it, who was called by that name. Horace calleth it *lapis viridis*. In Dutch, *ein Smaragde*: in Italian,

Iſiodor lib. 16. c. 7. de Etymolog. nomin.

Italian, *Smeraldo:* in Spaniſh, *Eſmeralda:* in French, *Eſmeraud.* The Perſians aud Indians call it *Pacheè.* The Arabians *Zamarut.* Serapio and Pandectarius call it *Tabarget.* In Engliſh it is called the *Green ſtone*, *Emerauld*, and *Smaragde.*

Of its kinds.

Amongſt the pretious green ſtones, there are none ſo pleaſant and ſo excellent as the *Emerauld:* it is pellucide, and doth much delight the eye with its colour. It hath no mixture of blue, as in the *Turkey-ſtone*; nor of yellow, as in the *Topaze* of the Ancients, which is now called the *Chryſolite.* The beſt Orientall ones are very hard, and of a very fair, pleaſant, green colour, like unto a green field in the Spring. They do much ſharpen and acuate the dulneſſe of the ſight, and therefore engravers will moſt willingly be employed about them. They are very tranſparent, and do very excellently dart forth their rayes like lightning; and therefore they are of great eſteem and price. Martinus Rulandus ſaith of an excellent *Emerauld*, that it doth excell in its verdure the watered graſſe, the neighbouring herbs, the vireſcencie of green boughs; and, as I may ſo ſay, even all the glory of the Spring. There is a *Smaragde* which Plinie *lib.* 37. *cap.* 10. calleth *Lymoniates.* Plinie *l.* 37. *c.*5. and Solinus *lib.*20. make twelve kinds of *Emeraulds.*

1. *Scythicus* or a *Scythian* one, which is the moſt noble of all others, becauſe of its excellent hardnes, and it is not ſubject to any injurie. This is found in gold mines, and cannot be obtained without a great deal of danger: For it is reported, that the Gry-

History. phines take charge of this, ſtand century about it, and have their ſafe cuſtody upon it. Theſe fierce ravenous birds make their neſts in the mines of gold where theſe pretious gemms are to be had, therefore the *Arimaſpi*, or *Monoculi*, who hunger much after the gold, and *Emeraulds*, are forced to arm themſelves for a battell with theſe birds, before they can obtain their prize.

2. The ſecond kind is called a *Bactrianus Smaragdus*, and is found in the clifts of rocks.

3. An Egyptian *Emerauld*, and is found about Thebes.

4. A Cyprian one.

5. Is called *Atticus*, and is there found in ſilver mines.

6. The ſixth is called an Ethiopian one.

7. The ſeventh is called *Medicus*, this is of very much excellent viridity or verdure; and ſometimes this its vireſcency doth appear as out of a *Saphire*.

8. The eighth kind is a *Carchedonian*, or *Calcedonian* one, and is called *Smaragdites*.

9. The ninth a *Tanian* one, and is brought from Perſia.

10. The tenth is a *Cilician* one.

11. The eleventh is a *Laconick* one, and is like to that which is called *Medicus*.

12. The twelfth is called *Chalco-ſmaragdus*, and is found in Cyprus, in veins of braſſe.

Of the places.

The ſeverall kinds of *Emeraulds* are found in the places

places ſpecified by the names of their kinds: There are Orientall ones, and there are Occidentall ones. The beſt are brought from the Eaſt-Indies. There are alſo excellent ones found in the Occidentall or Weſtern parts, and in the parts of Europe. There are found in Peru, which have a pleaſant green colour, but ſend forth no rayes, theſe are ſofter then the Orientall ones, and often times full of green clouds: there are excellent ones found in *Cyprus*, and in the Iſland of great Britane, which are ſmall; but for their bigneſſe comparable to the beſt Orientall ones, of the ſame bigneſſe. The Orientall ones are ſeldome found bigger then a filberd. The Occidentall ones, are ſometimes found as broad as the palm of the hand.

Hiſtory. It is reported of Nero that he was wont to behold the Fencers or ſword-players through an *Emerauld*, as by a *ſpeculum*, or optick-glaſſe; and for this cauſe this jewell is called *gemma Neronis*. Andreas Baccius in his book *de Natura Gemmarum*, maketh mention of a large *Emerauld*-veſſell that is at Genoa, very fair, and of infinite value, inſomuch as it cannot be prized.

Of its properties.

It is a ſtone which in former times was by ancient Aſtrologians dedicated to Mercury; Cardanus attributeth much power and vertue to it in the point of divination, as doth appear in his ſeaventh book *de lapidibus pretioſis*.

This ſtone is good to recreate the ſight; Andreas

as Baccius, Agricola, Cardanus, and Anſelmus Boetius ſay, that there is ſuch an enmity betwixt it, and illegitimate venery, or the uncleanneſſe of the fleſh, as that if it do but touch the skinne of an adulterer, it will break: and that it doth bridle the reins of laſciviouſneſſe, and much temper it; Inſomuch as Albertus Magnus doth not doubt to affirm that the king of *Hungariæ Belæ* having carnall knowledge of his wife, with an *Emerauld* ſet in gold on his finger, the *Emerauld* brake into three parts.

History.

Avenzoar ſaith it is good againſt poyſons, and that ſix grains of its powder in a convenient water is an excellent Cordiall; if ſo, then a drop or two of its tincture, deſcribed by Boetius, muſt needs be of admirable faculties.

Of its value and dignity.

Exod. 28. 18. For its ſacred uſe this ſtone hath been of great eſteem. This was one of the ſtones encloſed in one of the ouches of gold in the breaſt-plate of judgement. The rainbow that S. John ſaw in his Revelations round about the Throne, was like in ſight to an *Emerauld*, Revel. 4. 3. This is one of thoſe ſtones by which the glory of one of the foundations of the wall of the New Jeruſalem is diſcovered to us, as Revel. 21. 19.

This ſtone hath been alwayes of great eſteem, inſomuch as in times paſt they were forbidden to grave any thing upon it. The Orientall ones, have been eſteemed worth a quarter ſo much as a *Diamond* of the ſame weight.

Linſhorta-

Linſhortanus doth eſteem them of greater worth then the *Diamond*, and valueth an *Emerauld*, as big as a *Diamond* of foure grains, well worth 80 ducats; whereas he eſteemeth the *Diamond* of that bigneſſe not more worth then 70 ducats. A perfect glorious excellent *Emerauld* is of very much worth and value, as appeareth by this of *Aloyſius Mundella* a Phyſician, who teſtifieth that his brother who was a jeweller, received of *Franciſcus Maria* Prince of *Urbine*, the ſumme of 113 *aureos* to buy him an *Emerauld* of the weight of eight grains of wheat, moſt pure, and Orientall, that by it he might receive alleviation in an infirmity which he was troubled withall.

CHAP. XIII.

Of the Praſsius, Smaragdite, and Chryſopraſsius.

THe *Praſsius*, *Smaragdite*, or *Chryſopraſsius* is a transparent green gemm imitating the colour of green Leeks. The beauty of this ſtone ariſeth of the mixture of a yellow and green; the tranſparency of it is through a cloud: it is ſometimes found to have ſome reddiſh, whitiſh, or blackiſh ſpecks or colour, by reaſon of its growing to a *Jaſper*, or *Cryſtall*, or to ſome other jewell, from which it receiveth various ſmall bodies, and various colours. This gemm, as ſaith Baccius, is by ſome thought to be the houſe, Domicile, or Palace of the *Smaragde*, and that becauſe the *Emerauld* or *Smaragde* is found either in it, or affixt to it. *Deſcription of the ſtone.*

Of its Adulteration.

This ſtone, ſaith Anſelmus Boetius *lib.* 2. *c.* 57. *p.* 103. is ſeldome adulterated by reaſon of its ſmall value.

Of its kinds.

Baccius ſaith this gemm is a very fair gemm, and by ſome it is referred to the kinds of *Achates*, by others, to the kinds of *Beryls*. It is by Boetius reckoned among the kinds of *Emeraulds*, who doth make a diſcovery of three kinds of this ſtone.

1. A kind of an exact green colour like Leeks, or the *ſuccus porrorum*, as ſaith Baccius.

2. The ſecond kind hath very much yellowneſſe: and if theſe be of a golden ſplendour, then are they the *Chryſopteri* of the Ancients.

3. The third kind are whitiſh, with a little greenneſſe and a greater yellowneſſe.

Cardan. l. 7. *de lap. prec. p.* 346. Cardanus ſaith, that all green jewels are ſubject to the fire, by reaſon of the abundance of ſemiconcocted humour which they do contain in them.

The place.

They are found both in the *Eaſt* and *Weſt-Indies*, and in *Europe*, and in *Germanie*, and theſe are fairer then the Orientall ones, but ſomewhat ſofter: they are found in *Bohemia*, and in the neighbouring countreys thereabouts.

Of its properties.

It is ſaid to be of the nature of the *Smaragde*, or *Emerauld*,

Emerauld, but of ſomewhat more remiſſe power and faculties.

Of its dignity and value.

They are valued according to their beauty; their prices will not very much amount (though for their *Emerauld* beauty they may be of ſome had in very great eſteem) becauſe they are ſoft ſtones. It is reported of the *Praſius*, that it will ſuddenly looſe its viriditie, if there be any poyſon or venome in place where it is, and again recover its luſtre if it be waſht. It is alſo ſaid of it, that it is a great cordiall, much comforting the heart; and that it doth conferre much to the diſpelling of the darkneſſe and cloudineſſe of the ſight.

CHAP. XIIII.

Of the Chryſopraſſus.

THe *Chryſopraſſus* is a tranſparent green ſtone, with the ſplendour of gold. *Deſcription of the ſtone.*

The Ancients uſed to call all thoſe jewells which had the ſplendour of gold *Chryſolites*, of the Greek word χρυσὸς· and hence the *Praſius*, *Topaz*, and *Beryll*, which ſhine with golden rayes: and the *Chryſopraſius*, *Chryſopatius*, and *Chryſoberyllus*, which are found to have the ſame bright, golden luſtre joyned with their viriditie or greenneſſe, are ſo likewiſe called.

The *Chryſopraſius* hath the ſplendour of gold with

the greennesse of a leek: It is very pleasing to the sight, and of more esteem then the *Prasius*.

Its names.

In Hebrew נפך *Nopech:* as Exod. 28. 18. which according to Onkelos is the *Smaragde* or *Emerauld:* in Latine *Chrysoprasus:* in English the *Chrysoprasse*.

Of its properties.

It is thought to be endowed with the same faculties and *vires* that the *Prasius* is.

Of its dignities and value.

This stone is of esteem because of the sacred use it hath been of; by it we have the glory of one of the twelve foundations of the wal of the New Jerusalem discovered to us in the 21 chap. and the 20 verse of the Revelation of S. John; where it is said, that the tenth foundation of the wall, which was of a *Jasper* structure, was a *Chrysoprasus*, by which foundation S. Augustine doth signifie *S. Thomas*, in his explication of the book of Psalms. The citie saith he was pure gold like to cleare glasse, whose foundations was adorned with twelve pretious stones.

The first foundation was

1. *Jasper*, that is, *S. Petrus.*
2. *Sapphirus*, that is, *S. Paulus.*
3. *Chalcedonius*, that is, *S. Johannes.*
4. *Smaragdus*, that is, *S. Jacobus major.*
5. *Sardonyx*, that is, *S. Jacobus minor.*
6. *Sardius*, that is, *S. Andreas.*

7. *Chry-*

7. *Chryſolithus*, that is, *S. Matthæus.*
8. *Beryllus*, that is, *S. Simon.*
9. *Topazius*, that is, *S. Bartholomæus.*
10. *Chryſopraſſus*, that is, *S. Thomas.*
11. *Hyacinthus*, that is, *S. Philippus.*
12. *Amethyſtus*, that is, *S. Judas, Simonis frater.*

Then ſpeaking of the twelve gates of this citie, which are every one of one entire pearl, he ſaith, that by theſe gates are meant Chriſt the immaculate Lambe of God; who in the Goſpel of S. John, chap. 10. 9. calleth himſelf *the doore of the ſheep*, ſaying, *I am the doore of the ſheep, if any man enter in by me, he ſhall be ſafe, and go in and out, and find feeding.*

CHAP. XV.

Of the Smaragdo-Praſsius.

THe *Smaragdo-Praſsius* is a tranſparent green gemme, of a mixt beauty: it is betwixt a *Praſſius* and an *Emerauld*: it being compared with the *Praſsius*, hath the greenneſſe of graſſe without yellowneſſe; and if it be compared to the *Emerauld*, it hath in it a yellowiſh greenneſſe more then is in the *Emerauld*. It is ſeldome perfectly perſpicuous, becauſe it doth partake of ſome cloudineſſe. *Deſcription of the ſtone.*

Of the kinds of it.

Boetius taketh it for a kind of *Emerauld*, or a baſtard *Smaragde*. There are two kinds of it.

1. *Bohemian* ones, which are tranſparent through a fine thin cloud.

 2. *Ame-*

2. *American* ones, which are half tranſparent, like unto *Vitriol.*

Of its faculties, properties, dignities and value.

It is reported of it, that if it be applied to the arm, it will by a Diuretick facultie procure urine in a Dyſury; and expell gravell, and hinder the generation of the ſtone, aſſwage the pains of the reins, and the extream dolours of the gout. And if in the manner of an amulet it be hung about the neck, it is reported of it, that it will effect the ſame cures; and not onely ſo, but in children free them from fears and frights. This ſtone is known but to very few, therefore its worth, value, and price cannot well be diſcovered.

CHAP. XVI.

Of the Chryſolite, or rather of the true Topaze, which in ancient times was called a Chryſolite commonly and vulgarly; and of the Chryſopatius.

Deſcription of the ſtone.

The true *Topaze* of the ancients which commonly and vulgarly in former times hath been taken for a *Chryſolite*,, is a tranſparent gemme, of a diluted green colour, which ſeemeth (as ſaith Boetius) to have ſome yellowneſſe added to it. Andr. Baccius ſaith, it is a ſtone egregiouſly glorious, and in its kind excelling in viridity, and being found it is preferred before other gemms. When this gemme is found of a yellow greenneſſe, it is not (ſaith Boetius) then

then properly called *Topazius*, but *Chryſopatius*, and the mother of the *Smaragde*. In a *Chryſopatius* there is a golden ſplendour, which doth ſhine through a verd, or green colour. In a true *Chryſolite*, which is commonly and vulgarly called *Topaz* (of which in the next chapter) there is nothing elſe but a perfect, excellent, glorious ſun-ſhine, or a delightfull golden ſplendour; and in a perfect *Topaz* there is found an excellent, glorious, dilute, green colour, which is very delightfull to the eye; and without any touch or tincture of any other colour whatever. Thus are theſe three pretious gemms truly and perfectly diſtinguiſht, which Plinie doth ſpeak ſo confuſedly of, that nothing of truth can be gathered from him concerning them. *Vide Boet. pag.* 104.

Of its foyl or tincture.

This gemm being an excellent tranſparent gemm, of a dilute green colour, may admit of a ſilver foyl conveniently tinctured, or of ſome other foyl fitted for this purpoſe, and then placed in the encloſure under this gemme.

Of its adulteration.

And as this gemme may admit of a foyl, ſo no doubt but it may likewiſe be ſubject to adulteration: for it is very glorious and excellently pretious; and what will ſophiſticatours and impoſtours not attempt to do for value and for price? This they will attempt by double *Cryſtals* or diaphanous ſtones with a convenient green-foyl interpoſed, and they being thus

ſet

ſet in their incloſures with a like foyl ſubſtrate, the fallacies will the more uneaſily be diſcovered.

Of its names.

By the Hebrew words פטד and פטרה ſome do underſtand the *Topaz* of the Ancients; (of which Hebrew words we have before ſpoken in the chapter of the *Emerauld* or *Smaragde*) and that becauſe this ſtone is green like the *Emerauld*. It is called in Greek τοπάζιον, πάζιον of Heſych. it is thus called in Greek ἀπὸ τῦ τοπάζειν, τὸ ζητεῖν, *quòd multo ſtudio quæritur*. It is alſo called *Topazion*, from a cloudy iſland of the red ſea, which is often ſought for by Navigatours, for which frequent ſearch it is called *Topazion*, and the gemme is ſo named becauſe it is found in this iſland; *Topazin* from whence this name *Topazion* cometh, is a *Trogleditiſh* word, which in the language of the *Troglodites*, ſignifieth *quærere*, or *to ſeek*. The *Troglodites* are *Ethiopians*, which are extended to *Arabia* and the red ſea, who have this name from their frequenting of caverns and caves of the earth: hence in Greek they are called *Troglodites*, ἀπὸ τῆς τρώγλης, *hoc eſt*, *à ſpecu & caverna, quòd in ſpecubus & cavernis degant*. Plinie *l.* 37. *c.* 8. ſaith, that this gemme was firſt brought out of the Iſland of the *Troglodites*, called *Topazion à quærendo*, to *Berenice* Queen of *Egypt*, and from thence was called *Topazion*. It is called in Engliſh, *Topaz*; in Italian *Topazzio*; in French, *Topaſſe*; in Spaniſh, *Topazzie*; in Germane, *ein Topaſs*.

Of

Of its kinds.

Plinie maketh two kinds of it: 1. *Praſoin*, or 2. *Chryſopteron*: but neither of theſe have the true luſtre of the *Topaze*. Albertus *magnus* and Evax do likewiſe make two kinds of this ſtone, the one of an *aureus* colour, the other of a ſaffron colour: but both theſe are free, as well as the former two, from the delightfull glory of an excellent perfect *Topaze* deſcribed by me, according to the beſt diſcoveries, in the firſt part of this chapter, to be a pleaſing green gemm, of a dilute verdure and very delightfull to the eye.

Of the places.

The places in which the true *Topaze* is found, is the Iſland of *Chitis*, in *Arabia felix*: there is a certain rock in an Iſland of the red ſea, near *Arabia felix*, in which the *Topaze* is found: it is alſo found in the Iſland called *Topazion*, which is inhabited by the Troglodytes; and as Pliny ſaith, it is found in the mines of *Alabaſter* near *Thebes* a city of Egypt.

Of its properties, nature, and qualities.

It is of ſuch excellent faculties, as that it is ſaid of it, that it freeth men from paſſions, and from ſadneſſe of the mind. And that if it be caſt into ſcalding hot or boyling water, it doth ſo aſſwage in a wonderfull manner, and ſo in an inſtant, and of a ſuddain aſtoniſh and ſtupifie its heat and fervour, as that it ſtraight taketh away all its boyling, and its heat, and a man may in that very inſtant in which it

was put in, put his hand without any hurt or danger into that water which even now with the fervency of heat boyled up. (See Epiphanius and Albertus.) For this cauſe it is thought to be a very excellent remedy for the mitigating of choler and of cholerick paſſions. It is reported of it that it doth drive away nocturnall fears; and that it is a very effectuall Amulet againſt cholerick diſtempers o the brain.

Authours do ſay of it, that if it be put upon a table where poyſon is or venome is left, it will ſtraight-way fail of its ſplendour, and looſe its glory, and ſo ſoon as the poyſon or venome is taken away, it will recover all its glory again; wonderfull is this alſo which is reported of this ſtone, namely, that it doth increaſe and decreaſe in its ſtrength of powers and faculties, according to the increaſe and decreaſe of the Moon.

This ſtone is ſo hard that it will endure the file, and it groweth into ſo great a maſſe, that oft times ſtatues have been made of it. Juba king of *Mauritania* writeth concerning this pretious gemm, that there was a ſtatue of four cubits made of it for Arſinoe the wife of Ptolemeus Philadelphus, which was conſecrated to the gods.

It is reported of Hadrianus Gulielmus, that at Naples he had a *Topaz* engraven with theſe antient Romane letters.

Natura deficit.
Fortuna mutatur.
Deus omnia cernit.

In

In Engliſh thus.

Nature by frailty doth dayly waſt away.
Fortune is turn'd and changed every day.
In all, There is an eye know's no decay.
Fah ſee's for aye.

Of its dignity and value.

The excellent *Topaz* in the glory of its viridity hath been eſteemed a ſtone of great value, and that not onely for its innate inbred excellency whereby it is very pleaſant to the eye: but becauſe it hath been of ſacred uſe, as both old and new Teſtament do affirm. It was one of thoſe gemms which had a place in one of thoſe four rowes of ſtones engraven with the names of the tribes of Iſrael, and ſet in ouches of gold upon the breaſt-plate of Judgement, as Exodus 28. 17. where it was ſaid of God concerning the order of the pretious ſtones in the breaſt-plate of Judgement, The firſt row ſhall be a *Sardius* and a *Topaz*, and a *Carbuncle*, this ſhall be the firſt row. It is alſo one of thoſe ſtones whereby the glory of the ninth foundation of the wall of the New Jeruſalem is diſcovered to us, as Revel. 21. 20.

Thoſe that are excellent *Topazes*, do ſparkle forth their glory, and beam forth their delightfull rayes: theſe are of much eſteem, and of very great worth, price and value.

CHAP. XVII.

Of the Topaze, or rather of the true Chrysolite, and of the Chryselectrum and Melichrysus.

IN former times that hath been vulgarly and commonly called a *Chrysolite*, which truly is a *Topaze*, and that a *Topaze*, which is indeed a *Chrysolite*, as appeareth by Cardanus his book which he hath writ *de Lapidibus Pretiosis*.

Description of the stone.

The true *Chrysolite* is a gemm translucide, perspicuous or transparent, with an excellent *aureus* or golden splendour, or as I may so say, with a pleasing sun-shine splendour: Boetius saith, that a water coloured with Rhubarb or with Saffron doth make a representation of the tincture of a *Chrysolite*.

Of its foyl or tincture.

This being a transparent gemm doth without all question admit of a foyl, such as may be a gold foyl, or some other tinctured accordingly.

Of its adulteration.

The *Chrysolites* for the elegancy of their *aureus* colour are divers wayes adulterated; the best of such sophistications, is in this following manner. R. of powder of *Crystall*, or of glasse *lb.* put two drachmes of *Crocus Martis* to it, and a little *Minium:*

um: this muſt be put to it as it is molten upon the fire, or in the furnace. Baptiſta Porta in his *Magia* ſaith, that the *Minium* muſt firſt be put in, and after that the *Crocus*.

Or put to calcined *Cryſtall* thrice ſo much *Minium*, and let it ſtand for one whole day in a furnace, and it will be a *Chryſolite*.

Or R. *æs uſtum* finely powdered, and *Minium* and *Cryſtall* finely powdered, and four times ſo much burnt *Tinn*, put it into a ſtrong calcining pot and ſet it into a fornace for a day; this powder is eaſily melted; therefore the fire muſt not be very vehement, and it muſt be kept alwayes at the ſame ſtay.

Of its Names.

In Greek it is called χρυσόλιθος, *quaſi aureus lapis*; and from hence alſo in Latine it is called *Chryſolithus*, from the Greek word χρυσός, *quia eſt lapis qui aureo colore tranſlucet*, that is, becauſe it hath with it a Golden tranſlucency, ſaith Martinus Rulandus. Solinus *cap.* 33. calleth it *Chryſolampon*. In Engliſh it is called the *Chryſolite*.

The kinds of it.

There are three kinds of *Chryſolites*.

The firſt, which is the true *Chryſolite*, is a very hard glorious ſun-ſhine gemm; which Albertus Magnus ſaith doth diſcover the greateſt of its beauty in the mornings, and at other times of the day is leſſe beautifull then then.

The other two kinds of this gemm are leſſe glorious then the former; the one of theſe kinds is called *Chryſelectrum*; the other *Melichryſus*: both theſe names import ſomething of a golden colour, but theſe ſtones are leſſe glorious and ſofter then the former.

Of the places.

There are Orientall *Chryſolites*, and Occidentall *Chryſolites*; the beſt of the Orientall ones are found in *Æthiopia*: theſe are like unto moſt pure gold with an excellent ſplendour; they are the hardeſt of all other jewels but the *Diamond*. There are alſo *Chryſolites* found in *Arabia*, but theſe ſometimes have too much yellowneſſe, and ſometimes too little, ſometimes they have various colours, and ſometimes they are clouded; but theſe fall much ſhort of the glory of an excellent *Chryſolite*, whoſe ſun-ſhine beauty will eaſily make it known from all the ſoft troubled clouded kinds thereof. There are alſo *European Chryſolites*, which are frequently found in *Bohemia*, of as great glory and excellency as the Orientall ones, and they differ onely in this, in that theſe are ſomewhat ſofter then the Orientall ones. There are very excellent ones found in *India*, and *Bactria*, and thoſe in very great weight but ſoft, ſometimes of the weight of twelve pound. Anſelmus Boetius ſaith that he ſaw a *Bohemian Chryſolite* that was given to Rodolphus the ſecond, Emperour of Rome, that was two ells long, and half an ell broad.

Of

Of its nature, properties and qualities.

It is of the nature of the *Solaris*, or *Sun-ſtone*. Cardanus in his book of admirable cures, doth relate wonders concerning the vertues of the *Chryſolite*; he ſaith that with the alone powder of it drunk in wine, he cured Ceſar Palavicinus of a fever that he had been troubled withall fifteen dayes, and another Noble-man of Melancholy, and of the falling ſickneſſe with the ſame remedy, after that he had long in vain been tormented with the ſomniferous lotions of Phyſicians. The powder of it, is ſaid to be good in Aſthmatick paſſions, and in the *orthopnæa* if it be drunk in a convenient liquour. If in fevers it be held under the tongue it is ſaid to quench thirſt.

It is cold and dry as all other pretious ſtones are.

Of its value and dignity.

It is of eſteem, not onely for its ſun-ſhine glory; but for that alſo it hath been of ſacred uſe. This is one of thoſe ſtones by which the glory of the ſeaventh foundation of the wall of the New-Jeruſalem is diſcovered to us, as Revel. 21. 20.

It is for its gratefull aſpect of very great eſteem. It is ſo perfectly hard, as that by the heat of fire it may be made diaphanous and void of all colour, and thus like the beſt *Saphire*, changed into an admirable *Diamond*; in ſo much as it being thus dealt withall, no other ſtone whatever can better reſemble an Orientall *Diamond* then it will.

A *Chryſolite* of the weight of eight grains is worth

worth four crowns; one of these excellent ones of twelve grains weight is worth nine crowns; and one of these glorious ones of the weight of two scruples is worth one hundred crowns.

Anselmus Boetius saith, that he saw one of these that weighed scarce two scruples, and it was sold for two hundred crowns. The colour of which (he saith) being separated from it, it was so exactly set in a ring, that a skilfull jeweller could not know it from a true *Diamond*.

It is whitened after the same manner that the *Saphires* are; of which hath been before spoken.

Ovid. lib. 2. Metamorph. doth very splendidly feigne a chariot of the Sunne made of a *Chrysolite*, in that he saith,

Aureus axis erat, temo aureus, aurea summæ
Curvatura rotæ, radiorum argenteus ordo:
Per juga Chrysolithi, positæque ex ordine gemmæ
Clara repercusso reddebant lumina Phœbo.

CHAP. XVIII.

Of the Beryll.

Description of the stone.

THe *Beryll* is a transparent pretious gemme, of a pale green colour; such as is most truly resembled by a sea-water green: which colour is caused by the mixture of a blue and green: in so much as this gemme is blue out of a green; that is, it doth discover its blue through the colour of green.

Epiphanius saith of this gemme, that it is *glauca gemma*, of the colour of a quiet sea. All *Berylls* are transparent saith Boetius, and have an allayed colour, that

that is, not a full colour: for if they have a full colour, they are taken for other common jewells. If you would ſee the perfect colour of the *Beryll*, put a little *Indico* into fair water, and with it a tenth part of green colour, and you ſhall have the perfect reſemblance and true colour of the *Beryll*. Plinie ſaith that the *Beryll* is in faſhion ſix-quare, and in colour like oyl or water in the ſea.

Of its foyl or tincturê.

This being a tranſparent gemme, may without all peradventure admit of a foyl to quicken it, in the diſcovery of its glory and luſtre.

Of its adulteration.

Sophiſticatours are wont, *lucri causâ*, to adulterate this gemme thus: R. *æs uſtum* finely powdered, and mingle it with cryſtall and glaſſe powdered, or with calcined cryſtall and glaſſe, and ſet it in a furnace for a day, and you ſhall have a *Beryll*. One drachme of the *æs uſtum* is ſufficient for a pound of the other vitreous maſſe.

Of its names.

The Hebrews call this ſtone תרשיש *Tarſhiſh*, as Exod. 28. 20. It ſeemeth to have its name, as it doth appear by Buxtorff, from the maritime citie *Tarſhiſh*: It is a whole tranſparent ſtone, of a ſea-water green. The word תרשיש is by S. Hierome interpreted *Chryſolithus*; but indeed the *Chryſolite* which is *verè Chryſolithus*, is much different from it, as being of a gol-

See Biblioth. Reg. Hiſp. l. Exod. c. 28. verſ. 20.

den colour, whereas the *Tarshish* is green. Anselmus Boetius saith, that the Hebrews call this stone *Jashpech*; but thus it hath no resembance at all with the *Tarshish*, as it is by S. Hierome interpreted *Chrysolithus*; but it seemeth rather to have some kind of affinitie with the *species* of the *Jasper*, some of the kinds of which are of a green colour like the *Tarshish*. What the true *Chrysolite* is, will appeare by the former chapter, where a true discovery is made of it as it doth differ from the true *Topaz*, which was vulgarly by those of ancient time called *Chrysolithus*, and the *Chrysolithus* was by them called *Topazius*, but how improperly will appeare in the etymologie of the word *Chrysolithus*, which rendereth the *Chrysolite* to be of a golden colour, whereas the true *Topaz* is of a diluted green. This mistake hath arisen in the *Chrysolite* and *Topaz*, from the custome of them in ancient time, who were wont to call a *Chrysolite* a *Topaz*, and a *Topaz* a *Chrysolite*; whom in this their mistake many Lapidists have too too superciliously followed. Now becaus the *Beryll* (being a green pellucid stone) may sometimes be taken for a *Topaz*, which is likewise green and pellucid; it may be S. Hierome, according to that custome, hath interpreted the תרשיש, which in its own proper signification is *verus Beryllus*, to be *Chrysolithus*. In Latine *Beryllus*, and *Beryllus Thalassius sive marinus*. It is called *Beryll* of the nation where it is generated. The Italians call it *aqua marina*; and in English we call it a *Beryll*: when they have any golden rayes, they are called *Chrysoberylls*.

Of

Of its kinds.

There are many kinds of *Berylls*, amongſt which that is the true *Beryll* which hath the viriditie of a calm and pure ſea; a blue out of a green is diſcovered in theſe, and theſe are the true *Berylls*.

2. The ſecond kind are paler, and are called *Chryſoberylls*, from the ſplendour of gold.

3. The third kind are called *Chryſopraſus*, and theſe are paler then the former.

4. The fourth kind are called *Hyacinthizontes*, from the colour of a *Jacinth*.

5. The fifth kind are called *Æroides*, from the word *ære*, and theſe are greener then the former.

6. The ſixth kind are called *Cerinæ* from *cera*.

7. The ſeventh kind *Oleaginei ab oleo*. There is another kind which are ſaid to be like to *Cryſtalls*.

The *Beryll* of the ancients comprehended under it, all other jewells which are like unto a *Cryſtall*, with ſomewhat a diluted colour; as the *Topazes*, and the *Leucoſapphiri*. The Italians do untill this day call *Cryſtalls* which have ſome colours in themſelves by reaſon of the reflexion of the angles, *Berylls*.

The places.

The *Berylls* are found at the root of the mountain *Taurus*, and in the river *Euphrates*, and in *India*, and theſe are the beſt. The other kinds are found in divers countreys, as in *Germania*, and in *Bohemia*.

Of its properties.

A *Beryll* in a ſpherick form hath the ſame power of begetting fire from the Sunne by its beams, that a Cryſtall glaſſe hath. It is ſaid of a *Beryll*, that if it be wrapt in a linen cloth, and put into water, or put into water without it, the water will ſeem to be moved. *Baccius de nat. gem. in annotat. in cap.* 13.

Wurtzung in his generall practiſe ſaith, that the *Beryll* is uſed in all diſtempers of the heart. But take this caution by the way; Beware of the uſe of gemms (unleſſe you are ſure they be true) in Phyſick, by reaſon they are ſo frequently adulterated.

A caution in the medicinall uſe of this gemme.

Of its dignitie and value.

The *Beryll* is of eſteem not onely for its beauty, but for its ſacred uſe: for it was one of thoſe ſtones that was ſet in the Ephod; as Exod. 28. 20. and one of thoſe ſtones by which the glory of one of the foundations of the wall of the New Jeruſalem is diſcovered unto us; namely the eighth foundation, as Revel. 21. 20.

Ingenuous artificers do engrave the *Beryll* with many angles, that by the repercuſſion of them, they may be made the more lively, and the more to ſparkle.

The price of the *Beryll* is augmented or diminiſht according to the elegancie of its colour. And this rule is to be obſerved in the price of all jewells.

CHAP. XIX.

CHAP. XIX.

Of the Cryſtall and Pſeudo-diamond.

THe *Cryſtall* is a well known diaphanous gemm, like unto moſt pure water congealed into a tranſparent perfectly perſpicuous body of ſix ſides, which in its extremity doth ſeem to intend them all to one point. Well may it deſerve the name of a pretious Jewell for its own glorious diaphanity and untinctured perſpicuity; and not onely in regard of its own proper and peculiar beauty, but alſo for that by it, in Holy writ we have the glory of many ſacred things diſcovered to us by Emblemes. Had this gemm as much in *duritie* or hardneſſe, as it hath in the purity, excellency, and illuſtrioufneſſe of its beauty, no other gemm under the heavens would be comparable to the beſt *Cryſtall* for glory. What the manner of the generation of *Cryſtall* is, that the derivation of the word *Cryſtallus* will ſhew plainly to us. *Cryſtallus* cometh of the Greek words κρύος which ſignifieth *frigus, vel gelu*; and κέλλω which ſignifieth *contraho*. So that *Cryſtallus* is nothing elſe then *gelu concretum*, that is, then congealed ice, of this opinion is Gregorius in his comment upon the firſt chapter of the Propheſie of Ezechiel. There is great difference betwixt the ice and *Cryſtall*; the ice will ſwimme in the water, but the *Cryſtall* as being more weighty, doth ſtraight reſide: Diodorus Siculus doth very clearly diſſolve this difference in the latter end of his third book; where he ſaith, that *Cryſtall* is a ſtone which hath its originall of

Deſcription of the ſtone.

pure water congealed, not by the power of cold. (Though in Eccleſiaſtes it be ſaid, *flavit ventus aquilo, & congelavit cryſtallum*) But by a certain divine power, of an enlivening quickening heat which cauſeth it to keep its *durities*, and often times to diſcover ſo many various delightfull colours to the eye.

Anſelmus Boetius ſaith, that *Cryſtall* is the pureſt part of the earth diſſolved by water, which in the abſence of the water is congealed into *Cryſtall*; it is not, he ſaith, as is ſuppoſed, congealed water, for then like unto ice it would be diſſolved with heat, and conſumed by fire: but it is ſo farre from conſuming in the fire as that it being long molten or burned therein, it doth become a *Calx*, and pure earth, or a ſalt, by the benefit of whoſe ſpirit it is coagulated.

This gemm admitteth of no foyl to ſet off its glory. Nor is it oft adulterated, becauſe great proportions of it are found in many places. Bowls and cups of *Cryſtall* are of great eſteem with Princes; one of theſe of a foot in bigneſſe hath been ſold for 100 crowns; Boetius 111.

Of its names.

In Hebrew זכוכית (as Job 28. 17.) that is, *gemma nitidiſſima*, which is interpreted *Cryſtal*. Aben Ezra rendereth it *lapis pretioſus nitidus*. The Rabbins take it for *vitrum, à puritate*. It is called in Greek κρύσταλλος. In Latine *Cryſtallus*. In Italian *Cryſtallo*. In Germane *Cryſtall*. In Spaniſh and French *Cryſtall*. And in Engliſh *Cryſtall*.

The

The kinds of it.

The name of *Cryſtall* may be given to all gemms that are ſoft, diaphanous, and void of colour. Boetius maketh four kinds of it.

Firſt, *Cryſtallus Montanus*, which is excellently pure, fair, and beautifull, and is found ſometimes ſix cornered; and ſometimes round and globous like flints, which are harder then others, and like unto *Diamonds*.

2. The ſecond kind is called *Iris*.
3. *Citrinus*.
4. *Pſeudoadamas*.

Of the places.

The cornered ones are found in divers parts of *Europe*, as in the *Alpes*, in *Germany*, in *Bohemia*, in *Hungary*, in *Cyprus*, in *Luſitania*, and in the fields of *Piſania*. The round ones or *Pſeudoadamas*, are found near unto *Arnemhius* a Town of *Geldria*, & near unto *Bruxels*, and in *France*, *Bohemia*, and *Sileſia*. Theſe ſometimes are ſo hard and do ſo excellently ſparkle, that they can ſcarce be diſtinguiſhed from the Orientall *Diamonds*.

Of its nature and faculties.

It is cold and dry: being held under the tongue in fevers it doth quench thirſt; and ſo likewiſe in theſe caſes it doth much recreate if it be held in the hand, and as it groweth warm, cooled in fair water; the powder of it either calcined or crude being drunk in wine, is good againſt *Dyſenteries* and the whites,

whites, a drachme of its powder taken in the oyl of ſweet Almonds, cureth thoſe that have taken ſublimate. It is uſed either in powder, or the ſalt of it, or the oyl of it, againſt all obſtructions of the bowels, againſt gouts, ſwoonings, and all cephalick diſeaſes; ſaith Boetius, Andr. Baccius, and others.

Of its dignities and value.

* Rev. 21. 11. and 22. 1.

For its dignitie, the * ſacred uſe that hath been made of it maketh it of very great eſteem: and its own glory and beauty doth commend its worth, and accordingly it is valued and eſteemed of Princes and great men; and of thoſe who know how judiciouſly to judge of things according to their excellencie and intrinſick glory.

CHAP. XX.

Of the Aſteria, or Gemma Solis.

THe *Aſteria*, or *Gemma ſolis*, is a kind of *Opalus*, which doth ſparkle forth its beams like a ſtarre; it is a hard tranſparent ſtone. It is called *Gemma Solis*, becauſe if it be held againſt the Sunne, and turned, it ſeemeth to ſhew the Sunne as it were walking in it, or the likeneſſe of a moving ſtarre: and being held againſt the light, it doth the ſame.

Its names.

It is called of Plinie *Aſtroites*, and *Ceraunia*. It is alſo called *Aſteria*. Michael Mercatus calleth it *Aſtrobolus*. It is alſo called *Oculus felis*.

The

The place.

It is found in *Carmania* and *India*. Anſelmus Boetius ſaith, that he ſuppoſeth that to be the *Aſteria* or the *Gemma Solis*, which like a milkiſh *Cryſtall* having a round light included in it, doth ſend it forth walking with a certain inclination: and that to be the *Aſtroiten*, which hath in the middle of it as it were ſmall ſtarres ſhining. This is a kind of *Opalus*.

Of its nature and properties.

It is reported of it, that it doth procure ſleep, and drive away terrours of the night, and troubleſome dreams.

Its dignitie and value.

The Orientall ones are very beautifull, and ſo hard that they can hardly be engraven: it is eſteemed in value worth twice the price of the engraving.

CHAP. XXI.

Of the Oculus Cati.

THe *Oculus Cati* is the various coloured *Aſtroiten* of Plinie.

Its names.

It is called of ſome *Oculus Solis:* of the Perſians *Mithrax*, that is, the Sunne. Cardanus calleth it the *Pſeudopalus*; but the colours are not ſo diſtinct in this; and this alſo is farre harder.

Places.

They are found in *Zealand*, and in *Pegu*; they are ſaid to be brought from the countrey of *Bramaa* thither.

Its dignity and value.

This ſtone is greatly eſteemed amongſt the Indians, becauſe they are perſwaded of the devill, that he that weareth it cannot want riches: and for this cauſe that which in *Luſitania* is ſold for 90 *aurei*; is amongſt the Indians eſteemed worth 600 *aurei*. It is uſually of the ſame price and eſteem with the *Opalus*. Hitherto hath been ſpoken of tranſparent gemms.

The

The ſecond part of the Lapidarie.

Of ſemi-tranſparent or half-tranſparent Gemms.

CHAP. XXII.

Of the Sardius or Cornelian.

HItherto have been diſcovered the *ſpecies* of diaphanous or perfectly tranſparent gemms, in their immixt glory, or with their beautifull tinctures; together with their foyls, adulterations, names, kinds, the places in which they have their originall, their properties, natures, faculties, dignities, and values. It followeth that I ſhould make a like diſcovery of ſemi-tranſparent or half-tranſparent gemms: which that I may do; together with what I find in Anſelmus Boetius, I will joyn the veritie of other Simpliciſts or Lapidiſts, that ſo we may come to a perfect diſcovery of theſe gemms in their own proper excellency and glory, and in the beauty of their *ſpecies*. Amongſt the half tranſparent ſtones or gemms, Anſelmus Boetius giveth the firſt place to the *Sardius* or *Cornelian*. It being heretofore dignified by ſacred uſe both in the Old and New Teſtament (as will afterwards appeare in the dignitie and value thereof) it ſhall here

likewise be dignified with the first place, in the consideration of half transparent stones.

The *Sardius* or *Sarda* is a stone or pretious gemme of a red colour, which Plinie saith is best resembled by the colour of a pickled *Sardine* fish, or *Anchovis*, which colour if it be more remisse or dilute, then is it called *Carneolus*, or *Corneolus*, from the resemblance of flesh.

Half-transparent gemms admit of no foyls or tinctures; the reason of it is cleare in the sight of every eye: for what-ever foyl may be substrate in an encloſure of gold, under an half-transparent gemme, cannot for want of greater transparencie, render it more glorious then naturally it is in it self.

And as it admitteth of no foyl, so there is no adulteration of it to be found in Anselmus Boetius: what may be done by artificiall sophistications in this kind, I shall let alone, till further opportunitie, greater helps, and better informations. Onely this Boetius saith, that it is adulterated with glasse of the same colour: but this is very unlike, as every knowing eye will easily discover.

Of its names.

In Hebrew שהם as Job 28. 16. Buxtorff doth interpret it to be the *Onyx:* and others to be the *Sardonyx*, as Junius in Exod. 25.7. אבני שהם ואבני מלאים לאפר וחשן that is, *Lapides Sardoniches & lapides insitivi pro amiculo & pro pectorali sacro.* In Greek, Σάρδιος λίθος. In Latine it is called *Sardius*, *Sarda*,

Sarda, and *Carneolus*, and *Corneolus*, and *Cornelius*. The Italians and French call it *Carneolus*. The Germans *ein Corneol*. It hath also been called *Darneolus*, saith Pliny *lib.* 37. *cap.* 7. In English a *Sardius* or *Cornelian*.

Of the kinds of it.

There are three kinds of this gemm, as saith Boetius. 1. A red *Corneolus*, which is the best and most excellent of all other, *est ruber instar sanguinis:* but pellucid with its redness.

2. The second is of a more dilute and remisse redness.

3. Is somewhat yellowish out of a redness.

Martinus Rulandus reckoneth up no lesse then two and twenty kinds of this gemm. Of which we may have occasion in a further addition to speak hereafter.

Of the place, and of its nature, properties, and faculties.

This gemm is found in *Sardinia*, and about *Babylon*, in the heart of a rock, very excellent. There are also very good found in *Epirus*, now called *Albania*, and in *Egypt*, and in *India*, *Arabia*; in the *Rhine*, and in *Bohemia*, and in *Silesia* there are very excellent ones found growing to stones.

As concerning the faculties of this stone, Epiphanius asserteth of it, that it causeth him that weareth it to be of a chearfull heart, free from fear, and

noblely audacious, and that it is a good protection for him against witchcrafts and fascinations, and putrefactions of humours. Baccius in his Annotations saith, that the powder of it taken in austere wine stoppeth the *menses*, and hindereth abortion.

Andr. Bacc. de nat. Gem. c. 3.

Its dignity and value.

For its own beauty it is of value and worth: But the sacred use of it, is that that hath made it of greatest dignity, and highest esteem: in the law we find it was set in the enclosures of gold of the breastplate of Judgement, Exod. 28. 17. in the book of the Revelations we find the glory of the sixth foundation of the wall of the new-Jerusalem discovered to us by the glory of its resemblance, Revel. 21. 20. This stone hath been of great esteem amongst the Romanes, but now the knowledge of more excellent jewels makes it not so much regarded. Its use is chiefly in seals, and ornaments for the necks, wrests, and hair of women; one not engraved, of the bigness of the walnut, is worth twenty shillings. Cardanus saith that he had one, that was in its upper part a *Sardius*, and in its lower part an *Onyx*. In seals these gemms are much used of great men. I have had one of the best kinds of these fitted for a seal, without any engraving, with a small black line, on the side of it.

Cardan. l. de lap. pret.

CHAP.

CHAP. XXIII.

Of the Sardonyx or Cameus.

THe *Sardonyx* is a pellucid gemme which doth contain in it ſelf the glory of two gemms, namely the redneſſe of a *Sardius* or *Sarda*, and the whiteneſſe of an *Onyx*, by which it doth appear, that that ſtone which Cardanus reckoneth amongſt the kinds of *Cornelians* or *Sardius*, is a *Sardonyx*. And ſo indeed it is, for a *Cornelian* red in the upper part of it, and white in the lower part of it, is a *Sarda* or *Sardius* in its upper part, and an *Onyx* in its lower part; hence alſo Cardanus calleth a *Cornelian* thus beautified a *Sardonyx*, *lib. 7. de lap. pretioſis*. Boetius ſaith that a *Sardonyx* conſiſteth of a ſanguine, white, and black colour, which are diſtinguiſhed by circles, or girdles, as if they were done by art. Baccius *in Annotat.* ſaith, it conſiſteth of a treble colour, of a black below, of white in the middle, and of red above. But the name of this gemm doth end all controverſies about it, and make a very clear diſcovery of its beauty. *Deſcription of the ſtone.*

Of its Adulteration.

This gemm as the former, is adulterated with glaſſe, but that will eaſily be known by its want of beauty, and by its duſty *ſuperficies* which it will contract, and it will be eaten out by the air.

Of its names.

In Hebrew it is called שֹׁהַם even as is the *Sardius*

dius. In Greek Σαρδονυξ *quasi Sardius & Onyx.* Hence this stone is also called in Latine *Sardonyx*, from *Sardius & Onyx.* The jewellers of these our dayes, saith Boetius, call both the *Onyx* and the *Sardonyx*, *Nicolus.* It is also called *Cameus.* In English *Sardonyx.*

Of its kinds.

1. One kind of it Boetius saith hath black and white girdles, and is called the *Onyx.* 2. Another kind of it he saith hath one streak of one colour and an other of another colour, and this is called *Camehuya*, or *Cameus*, or *Onyx*, or *Sardonyx.* 3. Another kind he saith there is that hath purple, white, rosie, and skie colour, compassing one another like girdles, with the resemblance of a rainbow, which he saith, for their delight to the eye are of great dignity and worth. 4. Other kinds he saith there are of an hony colour, which have drosse in them, and have not the girdle united, but diffluent, which he saith are ignoble and of small price.

The place.

These stones are found in *Arabia*, *Germanie*, and *Silesia*, and in the neighbouring countreys. Of these gemms the Orientall ones are the best of all others.

The *Sardonyx* is found in great bignesse, insomuch as cups may be made of it, which are of great esteem and worth.

Of its nature and properties.

It hath the same vertues with the *Sardius* and *Cornelian*, saith Boetius, Pliny, and Cardanus.

of

Of its dignity and value.

This ſtone likewiſe hath been of great eſteem, as it was in former times of ſacred uſe: nature here, as being much pleaſed with unity, hath united the beauty of two gemms in one, and by thus ſporting it ſelf with the conſent of beauty, it hath reconciled the Law and Goſpel; for the *Onyx* is one of thoſe ſtones which was ſet in the encloſures of gold in the breaſt-plate of Judgement, and the *Sardonyx* is that pretious gemm by which the glory of the fift foundation of the wall of the New Jeruſalem is diſcovered to us. Exod. 28. 20. Revel. 21. 20.

Demoſtratus ſaith that Scipio Africanus was the firſt that ever brought this gemm in uſe amongſt the Romanes, and by this means it was famous not onely amongſt them, but alſo by their perſwaſions, amongſt the Indians.

The *Sardonyx*, with the beauty of a *Sardius* and an *Onyx*, without mixture of any other colour is of great eſteem and worth.

The China veſſels which are brought into theſe parts, are ſuppoſed to be made of this ſtone and the fatter part of the earth boyled together.

It is related of Mithridates king of Pontus, that he had 4000 veſſels of this mettall. *Hiſtory.*

CHAP. XXIV.

Of the Chalcedony, Carcedonie, or Carchedonie.

THe *Chalcedony* or *Carchedony* is an half-tranſparent ſtone, of an obſcure, fiery, red colour, and very hard. *Deſcription of the ſtone.*

Of its adulteration.

It is adulterated with *Cryſtall* and *calx Argenti* melted together in a furnace for a day.

Of its kinds.

Plinie reckoneth this ſtone amongſt the kinds of *Rubies*, but theſe are of a blacker aſpect: yet they are paler and more obſcure then the *Carbuncle*. He ſaith there is a male and a female of it; and that the male hath its ſtarres burning within it ſelf: and that the female doth poure forth its ſparkling rayes. But theſe for their glory, may better be referred to the *Granats* and Orientall *Amethyſts*, then to the *Chalcedonies*.

There are Orientall *Chalcedonies*, and they are of a purple or sky-colour, mixt with white, and pleaſing to the ſight: or elſe they have a very pleaſing redneſſe, and thoſe that have ſuch a redneſſe, are the *Chalcedonies* of the Ancients; of this ſort Anſelmus Boetius ſaith he had many, *Boet. l. 2. p.* 121.

There are *Chalcedonies* of an earthy, obſcure, white colour, and theſe are the worſt of all other.

The trueſt and beſt of all other *Chalcedonies*, Boetius ſaith, are thoſe in which sky-colour, white, yellow, and red, do with a certain delightfull and pleaſing confuſion appeare, which being held againſt the the Sunne, doth by the reflexion of its rayes, ſhew the colour of the rain-bow.

Of the place.

It is found in *Germanie*, in *Belgia*, about *Lovain*, and about *Bruxels*.

Its

Its properties.

It is reported of it, that it driveth away evil ſpirits, that it is good againſt melancholy and ſadneſſe, that it procureth victory to him that is the poſſeſſour of it, and carrieth it about him. *Andr. Bacc. in annot. ſuper 6. c. de nat. gem.*

Its dignitie and value.

It hath been of great eſteem for its ſacred uſe; it is one of thoſe ſtones by which the glory of the third foundation of the wall of the New Jeruſalem is diſcovered to us, Revel. 21. 19.

The chiefeſt uſe of theſe is in ſeals; for it ſealeth freely, without any devouring of the wax.

The beſt are of the ſame eſteem and price with the *Sardonyx*.

CHAP. XXV.

Of the Onyx and Chamehuia.

THe *Onyx* is a pretious gemme which repreſents the candour and beautie of a mans nayl: hence in Greek it is called ὄνυξ, and in Latine *Onyx* and *Onychium*. *Deſcription of the ſtone.*

Of its adulteration.

The want of price maketh theſe gemms ſeldome to be adulterated. That which hath the white diſtinctly from the black, is often adulterated, and ſold for a *Cameus*.

The *Onyx* of Dioſcorides is the *Alabaſter*, and this truly is very like to a mans nayl.

Of its names.

In Hebrew it is called שהם, even as is the *Sardius* and *Sardonyx*. In Greek ὄνυξ, in Latine *Onyx* and *Onychium*; in Italian *Nicolo*. In Germane *Onykel*, in English the *Onyx*.

Its kinds.

There is an *Arabian Onyx* which is black with white zones or circles, by reason of which many colours are caused in it. Then there is a *Camehuia* or *Memphitis*, with a black zone or circle under a white zone or circle.

The difference betwixt the Sardonyx, Chalcedony, and Onyx.

The difference betwixt the *Sardonyx*, *Chalcedonie*, and *Onyx* is this: The *Sardonyx* hath the red colour of the *Sardius* or *Corneolus*, and the white colour of the *Onyx*. The *Chalcedonie* hath a red and black colour confusedly mixt together. The *Onyx* hath onely the perfect beauty of a mans nayl.

Boetius saith it is called an *Onyx*, when the black appeareth as it were under a white. The true *Onyx*, saith Boetius, is a gemme that hath many veins compassed about with milkish zones or girdles, and meeting in a pleasing concord and consent.

Its properties.

Dioscorides speaketh strange things of the vertue of this stone, as that it doth excite passions, move melancholy, and stirre up strifes, if it be worn about the neck as an amulet, and that it doth hinder the fits of the *Epilepsie*.

Dignities

Dignities and vertues.

This ſtone likewiſe, for its ſacred uſe, hath been of great eſteem; as Job. 28. 16. It was much eſteemed amongſt the Jews, happily becauſe it was commanded of God to be ſet in the ſhoulders of the Ephod, with the names of the twelve Tribes engraven in it, as Exod. 28. 20. It is ſometimes of ſo great magnitude, that little pillars have been made of it. There are ſix little pillars of it *in Baſilica S. Petri Romæ*. At *Colonia* in the temple *Trium Magorum*, there is one broader then the palm of the hand. Plinie *l.* 37. *c.* 1. ſaith, that *Polycrates* had a very fair *Onyx*. Not onely the beauty of this ſtone, but the bigneſſe of it maketh it of very great price. Appianus teſtifieth, that *Mithridates* king of *Pontus* had two thouſand cups of this gemme amongſt his houſholdſtuff. *See Andr. Bac. in annot.*

CHAP. XXVI.

Of the Agate.

THe *Agate* is a pretious half-tranſparent gemme, full of pleaſure, becauſe of the variety of its colours: and beſides the various delightfull colours it is repleniſht withall, it hath alſo many times divers ſhapes in it, wrought in excellent workmanſhip by the skilfull hand of nature, and that very admirably landskep-wiſe; ſo that in them may be ſeen woods, rivers, trees, living creatures, fruits, flowers, herbs, and clouds, and all this not very obſcurely neither.

It is reported of king *Pyrrhus*, that he had an *Agate* in which, by the handy-work of nature, was to be *Hiſtory.*

ſeen the nine Muſes, and Apollo holding his harp.

It is reported of *Camillus Leonardus Piſaurenſis*, that he ſaw one which reſembled in it ſelf ſeven trees ſtanding upon a plain.

Of its adulteration.

It is adulterated with glaſſe mixt with divers colours: but this is eaſily known: for the *Agate* is ſo hard that it refuſeth the file, and for its excellent ſmoothneſſe duſt will not ſtick to it.

Its names, and places where it is found.

In Hebrew it is called שבו, as Exod. 28. 19. which by ſome Jews is interpeted the *Topaz*. It hath its names from the reſemblances and forms which it hath in it: as *Leuchachates*, *Dendrachates*, *Corallachates*. The faireſt of it is brought from *India* and *Sicily*; it is alſo found in *Germany* in the Landtgrave of *Lichtenbergs* countrey, not farre from the town of *Schindthutten*: and in *Bohemia* not farre from *Argentine*, a *Leuchachates* ſprinkled with black ſpecks of a purpliſh colour, very good and excellent is found.

Its nature and properties.

It is ſaid to be good againſt poyſon and contagions. It is reported of the eagle, that it doth carry this gemme into her neſt, to ſecure her young from the bitings of venomous creatures. So Andr. Bacc. and Dioſcorides.

Its dignitie and value.

This ſtone hath been of eſteem for its ſacred uſe;

it

it was one of those stones which were set in the enclosures of the breast-plate of Judgement, Exod. 28. 19. Anselmus Boetius saith, that he saw one that was twice as broad as the palm of a mans hand, in which was artificially graven the image of Julius Cesar and his wife, which was sold for 8000 crowns. It hath been used for the adorning of those crowns, which in former times were called *precariæ coronæ*.

CHAP. XXVII.
Of the Oculus Beli, Oculus Cati, and Leucophthalmos.

THe *Oculus Beli* is a half transparent gemm, the body of which is white, and in the midst of it there appeareth a black, like unto the *pupilla*, or the sight of the eye, which is compast about with an *iris*, so that it seems to be a very eye. This stone in ancient times was by the Assyrians dedicated to their God: this for its raritie is more worth then an *Achate*. *Leucophthalmos* is like unto the eye of the wolf: it cometh of the Greek words λύκος a wolf, and ὀφθαλμὸς an eye. Sometimes they have more eyes, and then they are called accordingly, as *Triophthalmos*.

CHAP. XXVIII.
Of the Jasper.

THe *Jasper* is a pretious gemm diaphanous and perfectly transparent, by which the glory of the *The Jasper is here put amongst the half-transparent stones, according to the custome of the ancients, who did not take this stone for a perfect diaphanous stone, as here I have described it out of Holy writ.*

light

light of the New Jeruſalem is diſcovered to us in the book of the Revelations, in theſe words; *And the Angel carried me into a very high mountain, and ſhewed me the holy city, New Jeruſalem, coming down from God out of heaven, having the glory of God, and its light was as the light of a ſtone moſt pretious, even like a Jaſper clear as Cryſtall.* Revel. 21. 10, 11.

The divers *ſpecies* of this ſtone, and the difference of Simpliciſts and *Lapidiſts* about it, do make it very difficult to be known. The Greek name of it (*viz.*) Ἰασπις according to the interpretation of Iſidore ſignifieth green, and ſuch a green as doth illuſtriouſly ſhine forth with a very ſupreme viridity or greenneſſe of glory. Epiphanius and Pliny take the *Jaſpis* for a gemm of an obtuſe green colour, like an *Emerauld*, yet not being ſo tranſparently glorious, and altogether ſo tranſlucent as the *Emerauld* is: this ſaith Pliny in his thirty ſeventh book, where he reckoneth up no leſſe then ſeven kinds of this gemm: yea, ten kinds of it. The third of theſe kinds he ſaith is like to the air and therefore is called *aerizuſa*, and of the Greeks *Boria*, becauſe it is like to the morning of an autumnall heaven; and the tenth kind he ſaith is like to *Cryſtall*; which concurreth with the firſt deſcription of this ſtone out of Holy writ; nevertheleſſe he preferres the purple *Jaſpis* above all other kinds; and next this, that which is like to the roſe; and then that which is of the viridity or greenneſſe of the *Smaragde*, to which, in his enumeration of the *ſpecies* of this gemm he doth give the firſt place. Dioſcorides ſpeaketh of ſeven kinds of it, and giveth likewiſe the firſt place

to

to the *Emerauld Jaſpis*; the ſecond to the *Cryſtall Jaſpis*; and the third to the *aërizuſa*. Rulandus ſpeaketh of two and twenty kinds of this gemm, and giveth the firſt place to the *Emerauld Jaſpis*, which he ſaith is on one part, of the colour of an *Emerauld*, on the other part, of a ceruleous colour. Now in the midſt of this confuſion which ariſeth from the multiplicity of *ſpecies*, whither ſhould we flie but to the truth to diſcover truth? and this telleth us, as before it hath been ſhewed, that it is a diaphanous ſtone, glorious, and full of light; and if ſo, then all the *ſpecies* ſo farre as they partake more or leſſe of tincture, or more or leſſe of colour, ſo farre they fall ſhort of the excellency, beauty and glory of the beſt *Jaſper*. It is not Iſidores interpretation of the word *Jaſpis* that makes it like an *Emerauld*; nor the Ancients various opinion about it, as that the purple one is the beſt, or that the roſe coloured one is the beſt, or that the *Emerauld Jaſpis* is the beſt, that makes it either to be the beſt *Jaſper*, or at all a *Jaſper*. But it is the truth of Scripture, which they were unacquainted with, which will convince all their opinions; that the true *Jaſper* is a diaphanous perfectly tranſparent glorious gemm, reſembling the beauty and glory of the light of heaven. This confuſion here of the *ſpecies* of gemms hath brought this gemm amongſt the half tranſparent gemms, which is as excellent and full of eſteem as the beſt of the moſt glorious perfectly diaphanous gemms, and ought to be preferred with them in the higheſt eſteem.

Its foyl or tincture.

This gemm or ſtone of price, for its fulneſſe of glory, and excellency of beauty, cannot admit of any foyl or tincture to commend its beauty withall.

Of its adulteration.

It can hardly for its excellent glory be adulterated, but the adulteration will be diſcovered in the defect of beauty, if the adulterate gemm be compared with the true *Jaſper*. Its *ſpecies*, all of them for the moſt part admitting of more or leſſe tincture or colour, may for this cauſe admit of many adulterations. * It is aſcribed by way of glory, to the king of Egypt; that the firſt adulteration of the *Jaſper* by tincture was from him; but the glory of this praiſe if I be not miſtaken, (*vertitur ſibi in vitium*) doth even become his ſhame.

* *See Andr. Bacc. in Annot. de Nat. Gem.*

Its names.

In Hebrew יָשְׁפֵה or יָשְׁפֵה as Exodus 28. 20. Rabbi Jonathan a Jewiſh interpreter, calleth the יָשְׁפֵה or יָשְׁפֵה פַּנְטִירִי that is, *Lapis Pantherinus* becauſe ſome of them are ſpotted with ſpots like a Panther. In Greek Ἴασπις. In Latine *Jaſpis*. In Engliſh *Jaſper*. In Dutch *ein Jaſp*. In French, Spaniſh, and Italian *Jaſpé*.

The kinds of it.

There are divers kinds of this ſtone ſaith Dioſcorides, Andreas Baccius, Wurtzung, Pliny, and Mar-

Martinus Rulandus. The true and beſt *Faſper* is that which hath in it ſuch illuſtrious glory as that it may be ſaid for the excellency of its beauty to reſemble the light of heaven.

The kinds of theſe ſtones according to Pliny are theſe. 1. A green tranſlucent *Faſper*, in glory like to an Indian *Emerauld*. 2. A gray *Faſper*. 3. An aiery *Faſper* called *aërizuſa*. 4. *Cærulea*. 5. *Purpurea*. 6. *Cærulea* with a non-reſplendent purple colour. 7. *Indica*. 8. *Turbida*. 9. A violet-coloured *Faſper*. 10. A *Cryſtall Faſper*.

To theſe Martinus Rulandus addeth another kind, namely, the *Turchus*, which gemm we do now call *Turchoys*, and the Dutch *ein Turckes*, and *ein Orientiſcher Turckis*.

Of the places.

The *Faſpers* are found in *Perſia*, *Cappadocia*, *India*, *Cyprus*, in *Phrygia*, *Thracia*, *Sardis*, in *Germany*, and in the parts of *America*.

Of its nature and faculties.

Galen teſtifieth, that if a green *Faſper* be hung about the neck in the manner of an *Amulet*, ſo that in a direct line it may reſpond to the ſtomach, it will ſtrengthen and confirm the naturall faculties of the ſtomach. It is reported of the croſſe white *Faſpers*, that they do preſerve men from the injuries of the water and from drowning: divers do very ſuperſtitiouſly attribute much power and vertue to them, if figures, images, and characters be engraven

upon them. The effects which by this means are wrought in or for any, Andreas Baccius doth attribute to the devil, in his Annot. *de nat. Gemm.* It is reported of it that it doth cure Epilepſies, by Nonus an ancient Phyſician.

Of its dignities and value.

This gemm as many before mentioned is of much eſteem, for that it hath been of ſacred uſe, and for that by the glory of it, we have many heavenly things reſembled to us in Scripture. This is one of thoſe gemms which was to be laſt ſet in the fourth row of gemms, with one of the names of the twelve Tribes engraven in it, in the ouches of gold upon the breaſt-plate of Judgement, Exodus 28. 20. This is the firſt of thoſe gemms by which in the New Teſtament the glory of the firſt foundation of the wall of the New Jeruſalem is diſcovered to us; the ſtructure and built of which wall is alſo there ſaid to be of *Jaſper*, and the light of the city of the New Jeruſalem, is there likewiſe ſaid to be like a ſtone moſt pretious, even like a *Jaſper*. Rev. 21. 10, 11. and 21. 19. In the fourth chapter of this book, to diſcover the glory of him that ſat upon the Throne, it is ſaid that he was like a *Jaſper*, Revel. 4. 3.

The *ſpecies* of it, for their beauty are of very great eſteem. * Baccius ſaith that the pleaſure which may be ſeen in a *Jaſper*, the beauty of which ariſeth from the mixture of many excellent greens, reds, and whites, cannot be expreſt: the excellent figures which ſome of them do make repreſentation of are wonder-

* *Andr. Bacc. c. 8. de Nat. Gem.*

wonderfull: In ſome of them may be ſeen after the manner of the cleare clouds of the aire; and in ſome like mountains, rivers, fields, and divers living creatures, and ſometimes like armed men trampling upon ſerpents: which, ſaith Baccius, do aſſert and teſtifie their power and vertue againſt all enemies: hence in the book of the Revelations it is ſaid, that the foundations and wall of the New Jeruſalem are of *Jaſper*, to ſignifie ſaith Baccius as S. Hierome interpreteth it, that the power of the *Jaſper*, and the greatneſſe of divine wiſdome and knowledge, doth overcome and beat down all the power of falſe doctrine.

The beſt *Jaſper*, for its excellent beauty and great glory, is of very high eſteem, and of great worth and value.

CHAP. XXIX.

Of the Heliotrope.

THe *Helotrope* is a half-tranſparent green gemme with ſanguine ſpecks, growing to the *Jaſper* and the *Praſius*. The name *Heliotropus* is derived from two Greek words; the one ἥλιος, which ſignifieth *the Sun*; the other τροπὴ, which ſignifieth *a turning*; as if did it turn according to the motion of the Sunn, as the herb *Heliotropium* or the *Marigold* doth open and ſhut with the riſing and ſetting of the Sunne. *Deſcription of the ſtone.*

Its names.

In Greek ἡλιοτρόπιον, in Latine *Heliotropus*, in Engliſh *Heliotrope*, and the Orientall *Jaſper*.

The places.

It is found in *India*, in *Ethiopia*, in *Africa*, in *Cyprus*, in *Germany*, in *Bohemia*; and that of ſo great a maſſe or bigneſſe, that oftentimes grave-ſtones to cover dead bodies are cut out of it; and yet (which is very ſtrange) Anſelmus Boetius ſaith, this ſtone is known to very few. *Boet. p.* 130.

Its nature and properties.

It is reported of it, that if it be put into water which is directly oppoſed to the beams of the Sun, it will make the water boyl, and cauſe it to be reſolved into a cloud, which not long after is diſſolved into dropps of rain. And that if it be put into fair water, oppoſed to the beams of the Sunne, it doth change its beams, and by the repercuſſion of the aire, ſeem to ſhadow the clearneſſe of its rayes; and ſo to induce a ſanguineous colour in the aire, as if the Sun by the interpoſition of the body of the Moon, did ſuffer an ecliptick darkneſſe. Martinus Rulandus and Baccius do ſay, that this power and facultie is proper onely to the *Ethiopick Heliotropes*. Hence this metrick elegancie of *Marbodæus:*

Ex re nomen habens eſt Heliotropia gemma;
Quæ ſolis radiis in aqua ſubjecta Batillo
Sanguineum reddit mutato lumine ſolem,
Eclipſimq; novam terris effundere cogit.

There is a report, which ariſeth of the impudence of Magicians, that if this gemme be anointed with the juyce of a *Marigold*, it will cauſe him that carrieth it to walk inviſible. So ſaith Plinie.

This

This gemme is said to be endued with the same faculties with the *Jasper*; and to procure men riches, and good report amongst men; and to be good against venoms and fluxes of bloud. Plinie *lib.* 37. *cap.* 10.

CHAP. XXX.

Of Lapis Nephriticus, or the Nephritick stone.

THe *Lapis Nephriticus* is a hard semi-transparent gemme, of a white greenish colour. *Boet.* 131.

Of its kinds.

Anselmus Boetius and others reckon both the *Heliotrope*, and also this stone amongst the Jaspers; betwixt this and the *Jasper* he puts onely this difference, namely, that this is the harder, and cannot so exactly be polisht as that may be.

Boetius saith that he had a *Lapis Nephriticus* like unto *Crystall*, perspicuous, with a little white cloud, which grew to one of the green ones.

They are sometimes found growing to the *Jasper* and *Prasius*: but for the most part they are found like unto whetstones in the fields, in so great lumps as cups may be made with them. *Boet.* 131.

The places.

They are found in *Spain*, aud *New Spain*.

Of its nature and properties.

The *Nephritick* stone is a stone of no gratefull aspect

aspect; & though Boetius doth here place it amongst the half-transparent gemms; yet other jewellers and expert Simplicists & Lapidists do not reckon it of any such esteem. It is called the *Nephritick* stone, from the power and facultie which it is (as Authours say) endued withall against the pains of the reins, and to expell the stone and gravell; and this it doth (as is reported) by being worn on the arm or wrist. This use the Indians make of it. What being thus worn it doth effect upon its subject, is by the power of an occult qualitie. Wecker saith, that a Noble-man well known to him, had an excellent *Nephritick* stone which he wore at his arm, by the power of which he voided a very great quantitie of gravell, so great as that he feared lest he should suffer harm by so large an expulsion of it in so short a time; and for this cause to avoid the evil, he laid away his *Nephritick* stone, and was never troubled with his gravell afterwards. He likewise reporteth, that the Dutchesse of *Bejar* being three times in a very short space troubled with *Nephritick* pains, made her self a bracelet of this stone, and wore it continually; and from the time of her wearing of it, for the space of ten yeares and upward, she was not vext nor troubled with her pain. *Weck. lib. 1. de lap. pretios. Idem dixit Nic. Monardus.*

CHAP. XXXI.

Of the Malachite or Molochite.

THe *Molochite* is a half-transparent gemme of an obscure green colour, much like the herb called *Mallows*. The *Germans* say that this gemme imitateth

teth a *Saphire* in a dilute or cleare green, which ſome affirm to be a kind of *Turchoys*. *Bacc. de nat. gem. c. 29.* This gemme Boetius ſaith is adorned with white veins, mixt with a sky-colour, and ſometimes ſpecked with black.

Of its names.

In Greek it is called μαλάχη, that is, *Malva*; in Latine, *Molochites*, and *Malachites*.

The places where it is found.

It is brought from *Arabia*. In a tower of a temple at the gate of *Tangræ*, there may be ſeen *Molochites* of a good large bigneſſe: It is found alſo in *Cyprus*, and in *Germanie*, chiefly about *Miſnia*, and the Province of *Tirol*. Sometimes in the largeneſſe of the palm of a mans hand, and ſometimes ſo big and large, as that little cups may be made of it.

Its vertues.

It prevaileth by a ſingular power againſt all perils, dangers, and infirmities that infants are ſubject to, and it ſecureth them from vain fears, and addeth ſtrength unto them; ſo ſaith Plinie, *l. 37. c. 8.* and Solinus in *Polyhiſtor. c. 36.* and Baccius *de nat. gem. c. 29.* Crato ſaith that this ſtone hath an excellent facultie in the ſtrengthening of the ſtomach. It is ſaid to preſerve children from perillous and hurtfull chance; and cureth them of their familiar diſeaſe, namely convulſions. Superſtitious perſons do engrave upon it the figure of the Sunne, to preſerve them from incantations, and wicked ſpirits, and venomous creatures. *Anſel. Boet. c. de Moloch.*

It is ſaid to cure the *Cardialgia* and the Colick, it may effect this by its purging faculty: for Boetius ſaith, that if it be taken in the weight of ſix grains, it doth purge like Antimony.

CHAP. XXXII.

Of the Turky ſtone.

Deſcription of the ſtone.

THe *Turky ſtone* is a very hard gemm of no tranſparency, yet full of beauty, as giving the grace of its colour in a skie colour out of a green, in the which may be imagined a little milkiſh perfuſion; Indico will give the perfect colour of it, and Verdigreaſe hath a perfect reſemblance of it; and a clear skie colour free from all clouds will moſt excellently diſcover the beauty of a *Turky ſtone*. Non-tranſparent ſtones, and wholly ſhadowed gemms admit of no foyls, therefore nothing concerning them muſt be here expected. The *Turky ſtone* is throughout of the ſame beauty, as well internally as externally; it wants no help of tincture to ſet it off in grace, the conſtancy of its own beauty without any extraneall help is the ſupport of it, and beareth it up againſt all defects. * It is an excellent gemm of a moſt ſimple ſubſtance, in every part like it ſelf, moſt pure in colour, and without ſpot, and the conſtancy of its beauty is a ſufficient commendation for it ſelf.

* *Andr. Bacc. c. 30. de Nat. Gem.*

Of the imitation of the Turky, and the correction of its colour if it vaniſh.

The Venetians have a very pretty way by which they will neatly imitate this gemm, and that is with Venice glaſſe, prepared with a convenient skie-coloured tincture.

If at any time there do appear any kind of vaniſhing of colour in the *Turky ſtone*, it may be recovered by rubbing it with oyl of Vitrioll.

Of its names.

In Greek βόρεα. It is in Latine called *Turchus*, *Turchicus*, *Turchina*, *Turcheſia*, *Turchoys*; Pliny calleth it *Boreas*, which Martinus Rulandus maketh the ſixth kind of *Faſper*, which he ſaith is ceruleous like unto a ſerene heaven, and is called *Turcica* in Latine, and in Dutch *ein Orientiſcher Turckiſe*. It is of the Greeks called *Faſpis Aerizuſa*; Meſues calleth it *Feruzegi*. It hath its name *Turcicus*, either becauſe of its excellent beauty, or becauſe it is brought from the Turks, ſaith Baccius.

The kinds of it.

There are ſaith Baccius two kinds of it, an Orientall one, which is of tendency to a skie colour rather then to a green; and a Spaniſh one, of an obſcure green colour, with an ingratefull aſpect, and ſeldome without a chink or vein.

Rulandus maketh this ſtone, the ſixth kind of *Faſper* of a skie colour, which Pliny reckoneth as the third kind of *Faſper* and calleth it *aerizuſa*; but

in Greek it is called Βόειος, becauſe it hath a clear repreſentation of the ſerene morning of an Autumnall heaven. Dioſcorides even as Pliny, reckoneth *aeri-ſuſa*, as a third kind of *Jaſper*.

The place.

The Orientall ones are brought from *Perſia* and from the *Indies* into *Turky*, and into theſe parts; theſe are ſeldome bigger then a filberd and very rarely ſeen ſo big as a walnut. It is reported of the great Duke of Hetruria that he had one of this bigneſſe, on which was engraven the image of C. Julius Ceſar, which he kept in his repoſitory as a gemm of very high eſteem.

Hiſtory.

Boetius ſaith that he never ſaw one of theſe gemms bigger then a filberd.

I was once maſter of one of the beſt Orientall ones of a very pleaſing delightfull beauty, about the bigneſſe for breadth of the nail of a mans little finger, and for thickneſſe of the ſmall kernell of a filberd, in which was engraven a Lion Rampant with the year of its engraving, and ſo excellently as that no whit of the beauty of the gemm was in the leaſt kind empaired by it.

Some of the Orientall ones are ſaid to keep their colour perpetually, and thoſe are called *Turkies* of the old rock, and ſome of theſe gemms are ſaid by degrees to looſe their colour and to grow greeniſh, and theſe are called *Turkies* of the new rock.

There are alſo Occidentall ones, or Weſtern *Turcoys* which are more greeniſh then ordinary, or elſe whitiſh more then is meet, and theſe are found in *Spain*, *Germany*, *Bohemia* and *Sileſia*. *The*

The nature, faculties, and properties of the Turchoys ſtone.

Many ſtrange things beyond faith are reported concerning the vertues of this ſtone, which nothing but exceſſe of faith can believe.

As that if it be worn in a ring of gold it will preſerve men from falls, and from the bruiſes proceeding of them, by receiving that harm into it ſelf which otherwiſe would fall upon the man: yet theſe vertues are ſaid not to be in this gemm except the gemm be received of gift.

It is likewiſe ſaid to take away all enmity and to reconcile man and wife.

Rueus ſaith that he ſaw a *Turchoys* which upon the death of its maſter loſt all its beauty and contracted a cleft, which a certain man afterwards buying at an under price returned again to its former glory and beauty, as if ſaith he, by a certain ſenſe it had perceived it ſelf to have found a new maſter. The ſame Authour ſaith of it, that it doth change, grow pale, and deſtitute of its native colour, if he that weareth it do at any time grow infirm or weak; and again upon the recovery of its maſter, that it doth recover its own lovely beauty which ariſeth of the temperament of its own naturall heat, and becometh ceruleous like a ſerene heaven. *Hiſtory.*

This ſtone is very delightfull to the eye and is thought much to ſtrengthen the ſight, becauſe it doth not by its over brightneſſe too much diſſipate the viſive faculty, nor by its overmuch obſcureneſſe too much concentrate the viſive faculty.

Baccius in his Annotations ſaith that it is ſweat as a gumm out of a black ſtone in Perſia, which the Indians call *Peroſe*; the true *Turchoys* is known by the change of its colour; in the day time it is excellently ceruleous or skie coloured; at night time by candle light it is green.

* *See Andr. Bacc. in Annot. de Nat. Gem. cap. de lap. Turch.*

* Another way of triall of it is this, The lower part is ſometimes black, from whence iſſue ſmall veins which do inſinuate themſelves into the *ſuperficies*.

A third way which is very much commended for this purpoſe; diſſolve *calx* in water, then anoint the *ſuperficies* of the gemm with it, or put a little of this diſſolved *calx* upon the *ſuperficies*, and if upon this the *calx* receive a tincture, or colour from the gemm; this will ſhew that gemm to be a very excellent *Turchoys*.

Of its dignity and value.

The excellency of the colour of this ſtone doth ſet its price, and the breadth of it doth much enlarge the price.

It is of great eſteem with Princes and much pleaſure they take in its beauty; and it being ſet in gold they wear it on their fingers.

The Mauritanians uſe this ſtone in phyſick and call it *Peruzegi*, or *Perozaa*. Meſues uſeth it *in electuario de gemmis*, as Garcias *ab horto* hath obſerved.

Thoſe *Turchoyſes* that are of the bigneſſe of a filberd, and have an excellent colour like unto a ſerene skie, and not at all obſcured with any black veins, are ſold for two hundred crowns a peice and more. The breadth of the body of this ſtone doth appoint the

the price. That which is of the exact colour of *verdegreaſe*, or like unto a ſerene sky, without any black veins, is excellent. *Anſelm. Boet. pag.* 137. *c.* 17.

CHAP. XXXIII.

Of the Lapis Lazuli.

THe *Lapis Lazuli* is a fair ceruleous, blue, or sky-coloured ſtone, void of all tranſparency, and adorned with many bright golden ſpecks. *Deſcription of the ſtone.*

It differeth, ſaith Boetius, from the *Lapis Armenus* in this, that this ſtone is very hard, and the *Lapis Armenus* is eaſily broken and powdred, and wants with its ſoftneſſe the ornament of bright gold ſpecks.

Its names.

In Greek κυανὸς λίθος. In Latine *Cæruleus lapis*, and *Cyaneus lapis*; in Italian, *Azuro ultra-marino*; the Arabians call it *Hager* and *Hazul*. Of this ſtone is made the excellent azure that is more pretious then gold. It is alſo ſometimes made of the *Lapis Armenus*. The *Lapis Lazuli* is a pretious gemme, which being poliſht as other gemms, is wont to be ſet in gold rings, and worn on the finger.

Epiphanius doth reckon this gemme as a kind of *Saphire*, which Plinie calleth *Sapphirus Cyaneus*, or the male *Saphire*, and ſaith it is a ceruleous gemme, glorioufly ſplendent, with many bright golden ſtarry ſpecks. Plinie *lib.* 37. *c.* 9.

Of the places where it is found.

It is found in *Africa*, *Aſia*, and *Germanie*, in the gold

gold mines; the *Lapis Armenus* is the mother of it. It is also found in *Egypt*, *Cyprus*, *Scythia*. It is oftentimes of so great bigness, that spoons and hafts of knives are made of it. If this stone being put into the fire doth not change its colour, it is called *Lapis Lazuli fixus*, of which is made that pretious blue colour called azure.

Its nature, properties, faculties.

Dioscorides saith that this stone hath a repercussive faculty. Other Physicians have found by experience, that it hath in it a purgative facultie; and that it is good in all melancholy diseases, and the *Lapis Armenus* hath the same faculties.

Antonius Musa Brassavolus *in lib. de med. purgant.* saith, that the greatest *dosis* of it is a drachme, and that it doth purge excellently well without any torment at all. He prescribeth it in pills after this manner. *R. lapidis Lazuli præparati* ʒj, *Camphoræ*, *Anisi*, *Cinnamomi*, *Zinziberis*, *Mastiches ana gr. 6. Misce, & cum succo salviæ vel diacatholico fiant Pilulæ quinq;. Dosis est à* ʒij *ad* ʒj, *aut in pilulis, aut in pulvere, aut in jure, aut in aqua Boraginis, aut in conserva Boraginis, aut in vino Cretico.*

Its dignity and value.

A pound of the fragments of this stone is worth ten crowns, to make azure of; (*Boet.* 140.) and if it be very good, ten ounces of azure may be extracted out of it by three severall extractions: The first of which extractions will be five ʒʃ in weight; every ounce

ounce of which azure will be worth twenty crowns: The ſecond extraction which may amount in weight to a matter of three ounces will be worth five or ſix crowns an ounce: and the third extraction which may amount in weight to two ounces, may be worth in value a crown and a half, or one crown.

CHAP. XXXIV.

Of the Lapis Armenus.

THe *Lapis Armenus* is a fair, ceruleous, sky-coloured ſtone, of the ſame kind that the *Lapis Lazuli* is, but very fragil, and much ſofter, void of all golden veins or bright aureous ſpecks, and looſing its colour in the fire. *Deſcription of the ſtone.*

Of its names.

It is called *Lapis Armenus* in Latine, from the place whence it is brought, namely *Armenia*. In Italian *Verdazure*; in Arabick *Hager armeni*: in Germane *Bergblau*. in French *Verdazure*, that is, blue mixt with green. This *Lapis Armenus* being printed on a table, by age degenerateth into a green colour, which is contrary to the nature of a true azure; for that remaineth conſtant and permanent, without any alteration by continuance of time.

Its places.

There is an Orientall *Lapis Armenus*, and a Germane *Lapis Armenus*: The Orientall one is ſaid to be known from the Germane one, in that it looſeth not its colour, but becometh more illuſtrious and

glorious in the fire. This is meant of the *Lapis Lazuli*, and not of the *Lapis Armenus*. The *Lapis Armenus* is found in *Ultabade*, a famous city in the kingdome of *Balaguar*. It is brought from *Venice* and *Germany* into theſe parts.

Its nature, properties, and faculties.

This ſtone is eſteemed good againſt all melancholy diſeaſes. Unwaſht, it purgeth by vomit without any difficultie; but it being waſht, purgeth by ſtool: for this purpoſe, that it may lay down all irritation of the ſtomach to vomit, it muſt be waſht fiftie times: *Boetius. Trallianus lib. 1. c. de melancholia*, ſaith that it doth not at all in its purging torment or trouble the partie that taketh it. The doſe of the unwaſht ſtone is from ℈iij to iiij. more or leſſe according as the diſeaſe, or age, or ſtrength of the perſon will bear. The doſe of the waſht ſtone is from ℈v to ℈vi. in warm water; for by this means it doth not a whit trouble or moleſt. Or it may be taken in form of pills after this manner:

R. hieræ picræ ʒß, *Epithymi* ʒß, *Agarici* ℈iiii, *Scammoniæ* ʒi, *Garyophyllorum* ℈i, *fiat pulvis tenuiſsimus, & cum melle roſato aut Cydoniato incorporentur, Doſis eſt à* ℈ii *ad* ℈iiji: *hæ pilulæ Catholicæ ſunt, ſive Panchymagogæ*: for they purge all humours, but eſpecially aduſt and melancholy humours.

Guanerius doth preſcribe this ſtone in the form of a powder, in this manner:

R. Lap. Armeni quinquagies lotæ ℈ij. *Croci gr.* 10. *Macis* ℈i. *fiat pulvis, ſumat in aquæ Saccharatæ quantitate ſufficiente pro una doſi. Ætius lib. 2. c.* 47. ſaith, that

that it is good to give five grains of this ſtone, to thoſe that are troubled with melancholy, or to children in pectorall diſeaſes, or to Phreniticks or Epilepticks. or,

R. Centaurei minoris M. iii. Coque in lb. iiß. aquæ majoranæ ad. lb. i. Decocto colato adde ℈i, *Lapidis Armeni.*

See Dioſcorides, Cardanus, Garcias *ab horto.*

The colour of this is extracted as the *Lapis Lazuli*, and is then called Azure.

CHAP. XXXV.

Of the Aſtroites or Starre-ſtone.

THe *Aſtroites* or *Starre-ſtone*, is ſaith Boetius, a dark gemm of a whitiſh colour full of ſtarres, in the ſtead of which, ſometimes it hath the appearance of Roſes, and ſometimes of waves of water; and ſometimes all theſe repreſentations are to be had in one and the ſame gemm. He taketh it for a kind of *Achate*, and ſaith that theſe ſtones are to be found ſometimes in the bigneſſe of a mans head. Marſilius Ficinus calleth it the *Dracontium*, and thinketh that it is taken out of the head of the Indian Dragon. But this is thought to be nothing elſe but a falſhood, and a ſtory of it, raiſed by impoſtours to advance the price of it. *Deſcription of the ſtone.*

Andreas Baccius ſaith of the *Aſtroites* or *Aſteria* that it cometh near to the form of *Cryſtall*, and ſheweth by repercuſſion a certain light in a pale colour, in which internally ſome certain rayes after the manner of ſtarres do appear. And in his An-

notations he saith it is a hard stone, which being circumverted, sheweth the sunne shining within it. Cardanus saith that the *Stellaris lapis* doth differ from the *Astrites* as not being pretious at all nor perspicuous, but onely a stone distinguished with many spots of the colour of ashes.

Martinus Rulandus calleth this the *Astroites mas*, and saith it is of the figure of a half globe, full of ashy coloured starres.

Its names.

It is called *Astroites*, *Asteria*, and *Astrites*. In Dutch it is called *ein Siegstein voller sternen*, and *ein pater noster, von solchen siegsteinen*, and that because in old times they made use of this stone to number up *Pater nosters* by. In English it is called the *Starre-stone*.

Its kinds.

Of this stone Boetius maketh three kinds, which he representeth to the eye in their severall forms and figures. The one of which is round and hath no starres at all in it: The other is full of starres and round as the former. And the last is composed of divers starres united together in longitude which may easily be separated either with the hand or by the help of some instrument, and in their separation they shiver into the form of starres. And this last Anselmus Boetius calleth *Asteria vera*, or the true *Starre-stone*. as *lib.* 2. *de Gemm. p.* 151. *C. de Astroite.*

Martinus Rulandus doth also make three kinds of this stone. The

The first a male one full of starres.

The second a female one, in which is many resemblances of the worms which do destroy the herb Rocket and Colewort, which are commonly called Canker-worms and Palmer-worms: in this he saith there is no appearance at all of any of the starres of the masculine one.

The third kind he calleth *globuli ex Astroite.*

Of its nature and properties.

It is reported that four grains of this stone in some appropriate water, is excellent good against the plague, and to expell worms out of the body.

Cardanus reporteth wonders of the *Stellaris lapis*; which Andreas Baccius in his Annotations attributeth to the male *Astroite*. Cardanus saith that it being put into a vessel of vineger doth move it self and imitate the goings of creatures: this stone and the power and faculties thereof, was in times past saith Cardane very well known to Rabbi Aben Ezra. The progression or motion of this stone in a vessel of vineger or wine he attributeth to the vapour of the wine or vineger, which penetrating the stone, and finding not speedy issue out of it again, doth by impulsion move the stone too and again as being a light substance. Which wonder of motion as before I said Andreas Baccius in his Annotations attributeth to the male *Astroite*, and the cause of this motion he rendereth from *Agricola* thus; the starres being rare and of a thin substance and the *intermedium* grosse and thick; the *meatus*, passages, or porosities of the starres do imbibe or drink in the *History.*

vineger or wine, and afterwards expell the vapour or air of the wine or vineger which in its expulsion doth move the stone, and thus dissolve the wonder and take away the cause of admiration.

Some attribute unto it a power of obtaining victory for him that weareth it against his enemies; hence the Dutch call it *Siegstein*. It swelleth and enlargeth it self in its growth, in the form and figure of an eye. It is said to be good against Apoplexies, and by the very touch of the body to hinder the generation of worms.

Its dignitie and value.

These stones are sometimes found of very great bigness, and sometimes no bigger then the breadth of a mans nail, but of excellent beauty, and esteemed worth two crowns a piece, these for their beauty are oft set in gold and worn on the finger.

CHAP. XXXVI.

Of the Garatromo or Toadstone.

Description of the stone. THis stone is of a browniſh colour somewhat tending to rednes; convex on the one side; & on the other side, sometimes plain, sometimes hollow.

Some say this stone is found in the head of an old Toad; others say that the old Toad must be laid upon the cloth that is red and it will belch it up, or otherwise not; you may give a like credit to both these reports, for as little truth is to be found in them as may possibly be: Witnesse Anselmus Boetius in *lib.* 2. in the chapter of this stone; who saith that to try this experiment in his youth he took an old Toad

History.

and

and laid it upon a red cloth and watcht it a whole night to see it belch up its stone, but after his long and tedious watchfull expectation he found the old Toad in the same posture to gratifie the great pains of his whole nights restlessenesse, and since that time he taketh that stone which is called *Garatromo* or the *Toad-stone*, to be an obscure *Starre-stone*.

Its names.

This stone is called *Batrachites*, and *Brontia*, and *Ombria*, and *Garatronium*, *Lapis Borax*, *Lapis Bufonis*, *Lapis Rubetæ*. In French, *un Crapaut & Crapaudine*. In Germane *ein Krattenstein*. Some in Latine call it *Crapontina*. In English a *Toadstone*.

Of its kinds.

Baccius maketh two kinds of this stone: One of a whitish brown colour: Another of a black colour with a bluish eye.

This stone saith Boetius is sometimes found of the bignesse of an egg, and those that are so great, are sometimes browniſh, sometimes reddish, sometimes yellowish, sometimes greenish.

Some are no bigger then the nail of the hand and these by Jewellers are taken for the true *Toad-stones*.

It is reported of it that it is good against poyson if it be worn so as it may touch the skin, and that if poyson be present it will sweate, and that if any inflations procured by venemous creatures be touched with it, it will cure them. So saith Weckerus, Lemnius, and Baccius.

The

The third part of the Lapidarie.

Of non-tranſparent and common ſtones.

CHAP. XXXVII.

Of the Corall.

THus having made progreſſe with much perſpicuitie through all the *ſpecies* of diaphanous & perfectly tranſparent gemms; and through all the *ſpecies* of ſemi-tranſparent, or half-tranſparent gemms, (amongſt which ſome non-tranſparent gemms, for their excellencie, beauty, value, and worth are reckoned, as the *Turkey-ſtone*, *Lapis Lazuli*, and a kind of the *Aſtroites*, and ſome others,) which are wont to be encloſed in gold, and for their beauty and eſteem worn on the finger, or elſewhere about the body for its greater grace and ornament: we are at length arrived at the third part of our labour, which is a port or haven that lets me into the conſideration of ſtones that are not called by the names of gemms or pretious ſtones, though many of them for their beauty and vertue, if we conſider them joyntly, are comparable to ſome of the beautifull diaphanous ſtones; and excelling in beauty and vertue many of the ſemi-tranſparent or half-

half-perſpicuous gemms: and with theſe, to the conſideration of ſtones commonly ſo called, as they follow in their order after theſe ſtones of external beautie, which for their ſoftneſſe are of no great value or price.

In the order of theſe ſtones, the firſt place the *Corall* challengeth to it ſelf, as being more beautifull then the reſt, and as full of vertue as any. This is a bud of maritime beauty, and the delight of children, the beſt of natures buds, as ſome-what furthering the ſpring-tide of their growth. The *Corall* is a plant of natures ſetting in the ſea, which though being covered with the waters of the ſea, it be green and ſoft, yet ſo ſoon as it is elevated above the waves, and diſcovered in the region of the aire, it altereth its colour, and changeth its nature: its colour from green to a very noble & beautifull red; its ſoftneſſe into the compacted firmneſſe and ſolidneſſe of a ſtone, beautifull and laſting; by the operation of the aire encompaſſing its ſometimes ſoft and flaccid ſubſtance. It is (under the waters of a briniſh ſea) a thriving growing plant, ſprung up by nature with the ornament of many pretty branches, which is no ſooner violently forc'd from the place of its growth; and brought to light above the overflowings of the waters, but it bluſheth at the injurious hand that offereth violence to its ſecret, ſilent, tender, ſpreading growth.

The *Corall* is a delightfull, pleaſing, beautifull, red, hard ſtone, reſembling a plant, adorned with many pretty branches. *Deſcription of the Corall.*

Ovid. 4. Metamorph. concerning the originall of the *Corall* hath this fiction: Meduſa's head being cut

A fiction of the originall of the Corall.

off, Perseus took it and put it in the sand of the sea-shore with leaves and green rods under it, which rods by the touch of the head, grew hard and into a stony substance, which when the sea-nymphs saw, they took of those rods and spread them abroad in the sea, which became the seeds of *Corall*. Hence saith Ovid,

Nunc quoque Coraliis eadem natura remansit,
Duritiem tacto capiant ut ab aere: quódque
Vimen in æquore erat, fiat super æquora saxum.

& in lib. 15.

Sic & Coralium quo primùm contigit auras
Tempore, durescit: mollis fuit herba sub undis.

Of its adulteration.

In imitation of Nature, Art doth oft excellently find out a way of resembling this stone. The manner of it is this; Take the shrub which groweth out of the old wild Pear-tree, which is scarce a foot high, and cover it over with a very hard emplastre made of *Minium*, *Colophonia*, and *White-wax*: this being perfectly dry, must be levigated or polisht by the fire, and it will be so exactly like unto the *Corall*, that it will hardly be discerned from it. Or take the fine powder of *Corall*, and the white of an egge, and mix them together, and with them *Minium*, and then presse them in forms.

Its names.

In Hebrew it is called ראמות *Ramoth*, as Job 28. 18. In Greek λιθόδενδρον and ϰοραλία, thus Metrodorus calleth it, of the fiction of its originall from the Gor-

Gorgons head. It is called of Plinie *l.* 32. *c.* 2. and of ſome others beſides him, *Corallum*, *Cæralium*, *Ciralium*, and *Curalium*, for that it is pluckt up with nets, or cut up with an iron inſtrument. It is alſo called *Dentrites* of Plinie. It is alſo called in Latine *Coralium*, and *Corallium*, and *Sandaſtrum*. In Arabick *Baſſad*, *Beſed*, *Baſſath*, *Beliſis*. In German *Coral*. In Italian *Corallo*. In French *du Coral*.

Of its kinds.

Dioſcorides, Plinie, Cardane, Rulandus, and Boetius reckon three kinds of *Corall*; red, white, and black; yet all theſe are of the ſame kind of greenneſſe while as yet they remain in the place of their growth, under the waters of the ſea.

The beſt of theſe kinds is the red *Corall*, which imitateth the naturall *Minium*. Next this is the white *Corall*, and then the black. There is alſo *Corall* yellowiſh, & browniſh, and greeniſh, and reddiſh, falling much ſhort of the beauty of the firſt *Corall*.

Of the places.

Some of theſe kinds of *Corall* are found in the Weſt parts of England, about S. *Michaels Mount*. There is *Coralline* found growing to Oyſter-ſhells, muſcle-ſhels, and to ſtones in the ſea, under a place called *Reculvers* and *Marget* in the Ile of *Thanet*, and in otherplaces along the ſands from thence to *Dover*.

Its nature and properties.

The *Corall* is cold and dry, and aſtringent. It is re-

ported of it, that it will be of greater beauty if a man wear it, then if a woman; and that it will contract ungratefull spots, if the possessour of it be dangerously sick. By the change of its colour it is said to foreshew ensuing diseases. If it be worn in the manner of an amulet, it is said to drive away fears, and to keep men from inchantments, from poysoning, from epilepsies, and from the insultings of devills, from thunder, from tempests, and from all manner of perills: for this cause idolaters were wont to dedicate this stone to Jupiter and to Phœbus. This stone hath been thought of power to hinder the delusions of the devil, and to secure men from *Incubus* and *Succubus*. So Ansel. Boetius, & Dioscorides. Arnoldus *de villa nova*, adviseth to give to new-born children as soon as they are come into the world, before they have tasted any thing, ten grains of the powder of *Corall* in the mothers milk; by which means he saith they shall be preserved all the dayes of their life from the epilepsie. The same remedie Camillus Leonardus Medic. Pisauriensis, saith that he hath often experienced. There is a composition made of it, which is called *Diacorallium*, which is said to be very effectuall against vomiting, and to cure all fluxes of the belly. The description is this:

Tabellæ Corallatæ.

A confection in Lozenges.

R. Corallorum Rubeorum præparatorum ℥ii. *Margaritar. præparatar:* ℥i. *boli armeni* ℥ß. *ligni aloes* ℥i. *sacch. albissimi dissoluti in aqua rosarũ & cinnamomi tenuioris quantum sufficit; fiat confectio in tabellis.* Or this may be used in powder. and the alone powder of the *Corall* is given in the weight of half a drachme against

all

all contagions, plagues, poyſons, and maligne fevers, and to recreate the heart. The *tinctura Corallorum*, and the *ſal Corallorum* are endued with the ſame power and faculties: of which we may have an occaſion to ſpeak hereafter, according as our ſucceſſe is in this preſent undertaking.

Its dignitie and valne.

An ounce of *Corall* beads were wont to be ſold for a crown; ſometimes for more, ſometimes for leſſe. Anſelmus Boetius ſaith, that he ſaw one of theſe ſhrubs adorned with many branches, which was eſteemed worth an hundred crowns. Theſe are of great eſteem with Princes. If the *Corall* at any time fail in its beauty, it may again be reſtored by rubbing it with *Nitre*.

CHAP. XXXVIII.

Of the Amber, or Succinum.

THe *Amber* or *Succinum* is a fat bituminous ſubſtance, congealed into a ſtone of a white colour, and that through the power of heat. It is rare and pretious, endued with the vertues of Balm, and breatheth forth the fragrant ſmells of odoriferous ſpices. *Deſcription of the ſtone.*

The common ſort of *Amber*, which is fitteſt for ornament and externall deckings of the bodie, is a through-tranſparent ſtone, uſually full of ſmall motes or atomes, of a yellow or gold colour; in which ſometimes there are found ſmall creatures, as worms, and flies, and the like. The Greeks have a *A fiction.*

pretty fable or fiction concerning the generation and originall of the *Amber* or *Succinum* which they call *Electrum*, as that it should have its first originall from the tears of Phaetons sisters, who the fiction saith, lamenting the death of their brother Phaeton who was slain with lightning, were turned into poplar trees, and poure forth perpetuall tears by the river Eridanus, otherwise called Padus, which afterwards do *coire in unam massam*, and thus by concretion or congelation they do become the *Electrum*, *Succinum*, or *Amber*. Hence this of Ovid in his fable of the *Heliades*, 2. *Metam.*

A fiction of the originall of the Amber.

Indè fluunt lacrymæ, stillatáque sole rigescunt
De ramis Electra novis, quæ lividus amnis
Excipit & nuribus mittit gestanda Latinis.

Others have feigned that this stone is generated *ex urina lyncis* covered over in the sands. Epiphanius doubteth much concerning the word *Lyncurius* (which is interpreted *Amber*, or *Succinum*, and by some called *Lycurius*, but with very little correspondency to the Hebrew text) what *species* of gemm or pretious stone it ought to be taken for. * Cardanus saith that there is great contention amongst Authours concerning the *Succinum*, or *Amber*, but he himself asserteth it to be a bituminous substance congealed into a stone.

* *Cardan. l. 5. de Mistis.*

Of its adulteration.

I have thus spoken of the adulteration of gemms and stones of worth, immediately after the discovery of the true stones, least the distance of place, or other intermediate things should breed some confusion to my

my reader, and by this means take him off from the diligent conſideration of the differences of true gemms and ſtones from their falſifyings and adulterations. They being thus directly oppoſed together they will the more eaſily be diſcovered one from the other.

The adulterations of it are theſe.

Take *Succinum melleum*, and the white of an egg, and Saffron, and Gumme-dragon, theſe mix together with knats or flies, or chaff, or ſuch like things and a little powder of the true *Amber* to give it an odoriferous ſmell, and then by the power of heat bring it into a hard ſubſtance like amber. So Cardanus *lib. de Miſtis.*

Or take the fine powder of *Cryſtall* and the white of an egg and beat them together, adding a little water mixt with ſaffron, put this ſubſtance into a glaſſe and evaporate all the moiſture till it come to a full conſiſtence, and then form it, and by drying of it you will have your factitious *Amber*; and if you deſire to have a diaphanous body ſtrain it before you boyl it. So Mizaldus.

Or take liquid Maſtick, ſtrain it that it may be purged a little, and then adde of the root of *Curcuma* and ſo make a *ſpecies* of *Amber*. So Baptiſta Porta *in Magia ſua. c.* 1. *de Succino.*

But the beſt, moſt profitable, and excellenteſt of all other artificiall wayes is this; diſſolve as many ſmall pieces of *Amber* as you will, and coagulate them again into a maſſe, and he that can do this may indeed be called *verus Phyſicus*. This, ſaith Boetius, may eaſily be done, but ſuch knowledge as this is meet

meet for none but the wiſe. Thus much may ſuffice to be demonſtrated concerning the adulterations of this ſtone, that pious inquirers into nature may not be deceived. He that deſireth to know more of this, let him reade the hiſtory of *Andreas Libavius*.

Of its names.

In Greek it is called Ἠλεκτρον, becauſe it being rubbed and warmed, doth as it were entice and attract to its ſelf ſmall bodies, and little things, as chaff, and ſtraws, and the like, after the ſame manner that the Load-ſtone doth attract the iron. In Latine *Ambra*, and *Ampar*, and *Succinum Orientale*, thus the Romanes call it ſaith Andreas Baccius, becauſe it is concrete or congealed of a juyce, which floweth not from trees, but from the bowels of the earth. In Perſian *Carabe*. In the language of Ham or Egyptian language *Sacal*. In French *de la' Ambre*. In Germane *Agteſtien*, and *Angſtein*, and *Achſtein*, and *Boraſtien*. Of the Scythians *Sacrium Lyncurium*, and *Langurium*.

Of its kinds.

Anſel. Boetius maketh foure kinds of this ſtone:

1. White, which is very ſeldome tranſparent, but rare and more pretious then any of the other kinds, breathing forth pleaſing, ſweet, fragrant, ſpicie, odoriferous ſmells. This is endued with the vertues of Balſame.

2. A yellow *Amber* like unto gold, for the moſt part tranſparent, in which is uſually found many motes, and little creatures, ſuch as are flies.

3. An

3. An *Amber* adorned with various colours which is ſometimes tranſparent, and ſometimes opake or obſcure.

4. A dark and ſpotted *Amber* with very many ignoble colours.

Martinus Rulandus doth alſo thus reckon four kinds of this ſtone.

1. *Succina gravida*, of which he ſaith there are ſeven kinds.

2. *Succina liquida* or *Pellucida*, of which he ſaith there are thirteen kinds.

3. *Succina craſſa, non Pellucida*, of which he reckoneth eleven kinds.

4. *Succina mixta cum aliis ſuccis*, of which he ſheweth ten kinds: but I omit theſe till I have an occaſion for addition.

Of the places.

The *Amber* is found in *Pruſſia, Dania, Suevia, Livonia, Finland*, ſometimes in the bigneſſe of the head of a man.

The white is ſeldome found but in ſmall pieces.

Pliny writeth that a piece was brought to Rome of thirteen pound weight of the yellow *Amber*.

Of its nature and properties.

The white *Amber* is aſtringent and temperately hot, the yellow *Amber* hotter.

The white odoriferous *Amber* is eſteemed the beſt for Phyſick uſe, and thought to be of great power and force againſt many diſeaſes, as againſt the *Vertigo* and *Aſthmatick Paroxyſmes*, againſt *Catharres*, and

Arthriticall pains, againſt diſeaſes of the ſtomach, and to free it from ſtuffings and putrefactions, and againſt diſeaſes of the heart, againſt plagues, venoms and contagions. The Florentine Phyſicians are wont to preſcribe ſome few drops of its oyl to be taken in wine for the former purpoſes.

It is uſed either in powder, or in oyl, or in *Troches* either in the diſtempers of men; or of women, either married or unmarried, either with childe or without, or in the diſtempers of children.

Its dignity and value.

Princes were wont in former times to cauſe the *Precariæ Coronæ* to be made of the yellow *Amber*, which were little Crowns or Coronets of glory, given to thoſe that did obtain maſteries and ſet upon their heads in token of their victorious prizes. It hath been alſo uſed of women for Crowns; and it is now uſed in Neck-laces and Bracelets. It is oft made into ſmall cups about the bigneſſe of a mans fiſt, which are valued at ten and ſixteen crowns a piece.

If the *Amber* be found with great variety of ſhapes in it, it may be valued ſaith Boetius at the pleaſure of the poſſeſſour.

The *Amber* is uſed to make *vernix* withall.

The white *Amber* though it want the externall glory and tranſparency of the yellow *Amber*, yet is it beſt for phyſick uſe, as being endowed with a pleaſing odoriferous ſmell, and carrying away the balſamick vertues and all the efficacy, power, and faculties from the reſt.

CHAP.

CHAP. XXXIX.

Of the Gagate, or Stone-coal, as ſome think.

THe *Gagate* is a black ſtone of a poliſht ſplendour, generated (as ſaith Rulandus) of an oyly ſubſtance, which floweth forth of the rocks called *Petroleum*, or of *Naphtha ſubtile* which is much like *Petroleum*, if not the ſame: or of the naturall liquid *Bitumen*, which Wurtzung, a Germane Phyſician, taketh to be the ſame with *Naphtha* and *Petroleum*. *Deſcription of the ſtone.*

Of its names.

It hath its name *Gagate* from the river *Gagas* in *Cilicia*. Cardan ſaith, that of the *vulgus* it is called *Ambra Nigra*. In Dutch *Schewarſer Agſtein:* In French *Agathe:* In Spaniſh *Elzavaie*. It is of ſome called *Succinum Nigrum*.

Its kinds.

The beſt *Gagate* is that, which being put to the fire burneth like *Bitumen*. Of this Rulandus maketh theſe kinds; 1. The *Thracius lapis*, called in Dutch *Schewars Agetſtein*. 2. *Lithanthrax*, which is a ſtone of an earthy colour, congealed of *Naphtha* or *Bitumen*. 3. The *Stone-coal*.

The places.

The *Gagate* is found in *Britain*, in *Sicily* and in *France*.

Its vertue.

It is reported of it, that the wearing of this ſtone

doth secure men from nocturnall fears, from *Incubus* or *Succubus*, or the *night-mare*; and from evil spirits; and that it being drunk, will shew whether a maid have her virginitie or no. *Ansel. Boet. c. de Gagate.*

Cardan. lib. 5. de mistis.

Of its dignitie and value.

This is a stone of small value, and hath been used, saith Boetius, as black patches to make women seem beautifull. Cardanus *in lib. de mistis*, saith that it hath been used to reckon up *Pater nosters* withall: for the Saints in former times were wont to wear beads and bracelets of it, to number up their prayers by, and thereby to keep the account of their devotions. Cardane saith, that pilgrims were wont to bring from *Spain* the images and consecrated pictures of Saints, made of the black *Gagate* or *Stone-coal. Card. l. 5. de mistis.*

CHAP. XL.

Of the Lithantthrax, or Coals.

Description of the stone.

THe *Lithanthrax* is a stonie coal of the kinds of Gagate. It is a bituminous substance, which by the power of heat being concocted, is brought into the hardnesse of a stone.

Their names.

In Greek they are called ἄνθρακες. There are light ones which are called by *Theophrastus γαγάτης, or *Carbones leves*. There are also *Carbones graves*, called in Greek λιθάνθρακες: in Latine *Lapidei Carbones*: in Germane, *ein Stein-kol*: in English *Coals*.

** See Martin. Ruland. Lex. Chym.*

Places

Places.

This is found in the countrey of *Liege*, and in thoſe places where the *Gagate* is found.

Its uſe.

The common uſe of coals is ſo well known to all, as that I ſhall not need to ſpend further time in the diſcourſe of it. See *Boet. c. de Lithanthr. & And. Libav.*

CHAP. XLI.

Of the Gloſſopetra, or Tongue-ſtone.

THe *Gloſſopetra* is a ſtone of the ſimilitude of a Tongue.

The place.

It is found in the Alume-mines near *Luneberg.*

Its vertue and value.

Deſcription of the ſtone. Plin. lib. 37. cap. 19.

It is reported that the wearing of this ſtone will preſerve men from poyſons, and from witchcrafts; and that if poyſon be preſent in the room where it is, it will ſweat. *Boet.* It is a vile ſtone of very ſmall worth.

CHAP. XLII.

Of the Alectorius or Cock-ſtone.

THe *Alectorius* is a tranſparent gemme, of the bigneſſe of a Bean, found in the ſtomach of a Cock, like to Cryſtall or limpid water.

Its names.

In Greek ἀλεκτορία: In Latine *Alectorius*: In Germane, *ein Cappaunstein*: In English, the *Cock-stone*.

Its kinds.

The best (saith Plinie) is transparent like limpid water, or a Crystall. Boetius saith, that some of these stones are like to obscure Crystalls; and that there are others of a brownish colour; and that there are some found distinguisht with sanguine veins.

Its propertie and value.

It is reported of this stone, that it doth by a Solary power which it hath in it, make him that weareth it victorious over his enemies. See Solinus *cap.* 4. and Dioscorid. *l.* 2. *c.* 43. It is said of Milo Crotoniates, who lived in the times of the ancient Tarquinius, that by the help of this stone he became invincible. As long as the Cock hath this stone in his stomach, it is reported that he never drinketh. Boetius saith, that the certain experience of the Neotericks hath found this stone good to allay the heat of the heart, and to quench thirst if it be held in the mouth. L. Lemnius and Albertus Magnus have written concerning the vertue of this stone.

It is reported of it, that if it be held in the mouth it procures victory: and that it hath a power of stirring up of love and lust; and of making constant and eloquent, and of securing from all manner of perills.

This stone is very rare and pretious, and may therefore be prized and valued at the pleasure of the possessour.

CHAP.

CHAP. XLIII.

Of the Chelidonius Lapis, or Swallow-stone.

THe *Chelidonius* is a gemme, saith Rulandus, that is found in the stomach of Swallows of the first brood, if they be taken and opened either in the increase, or before the full of the Moon, as saith Weckerus.

There are two kinds of it, saith Boetius, one black, the other red. But of this and some others that follow, I shall not now endeavour to further my discourse, but deferre that, till I may see what the successe will be of these first undertakings. Concerning this stone, see Wecker. *l.* 1. *Antidot. special. de lap. minùs pretios. alterantib.*

Divers things have been spoken of the great vertues of this stone, of which hereafter I may speak. In the mean time conferre with Boetius, *pag.* 172. and Albertus Magnus.

CHAP. XLIIII.

Of the Dracontia, Draconitis, or Dragon-stone.

PLinie saith that this stone is found in the brain of Dragons, *Plin. l.* 37. *c.* 10. But I omit further discourse concerning it till a more convenient opportunitie.

CHAP. XLV.

CHAP. XLV.

Of the Snake-ſtone, which the Bohemians call Duchanek.

BOetius ſaith they are much deceived that take this for a ſtone, ſeeing they are nothing elſe but round glaſſes, formed on purpoſe to wind thread upon; and for this purpoſe, for the more celeritie of winding, they have a hole in the midſt of them, by which the Bohemian women hold them upon their fingers, during the time of their winding thread upon them. Theſe are called *Verticels* from their uſe, as being fit and meet to turn to and again. Theſe are uſed by the Bohemian women, and in *Belgia*, where Anſelmus Boetius ſaith he hath ſeen many of them.

Verticels.

CHAP. XLVI.

Of the ſtone called the Snakes-egge.

THis ſtone is a kind of *Toadſtone*, and may be referred to thoſe that are called *Brontia* or *Ombria*, of which ſee Plinie *l.* 29. *c.* 3.

CHAP. XLVII.

Of the Carp-ſtone.

THe *Carp-ſtone*, or rather the *Carp-bone*; for (ſaith Boetius) it is a triangular bone of a yellowiſh colour, found in the beginning of the back-bone of a *Carp*.

The powder of this being taken in drink, is ſaid to be good againſt the ſtone.

CHAP.

CHAP. XLVIII.

Of the Lapis Caymanus.

THis is a ſtone like to ordinary ſtones found in rivers; and it is alſo ſaid to be found in the ſtomach of a Crocodile. *Deſcription of the ſtone.*

The Indians and Spaniards are wont to uſe theſe ſtones againſt quartane fevers. *Anſelm. Boet. p.* 177.

CHAP. XLIX.

Of the Palumbella or Dove-ſtone.

THe *Palumbella* is a ſtone found in the belly of Stock-doves, which they are ſaid to ſwallow for their healths ſake.

CHAP. L.

Of the Swine-ſtone.

THis is a ſtone of a reddiſh colour and bitter taſt, which is ſaid to be found by a river neare *Malacca*, in the gall of the greater ſort of ſwine. *Boet.* 178.

CHAP. LI.

Of the Lapis Cenar.

THeſe are thoſe ſtones of which thoſe beautifull cups and diſhes are made, which are commonly called by the name of *China* veſſells. They are pleaſant and of great eſteem, and much uſed for ornament.

CHAP. LII.

Of the Lapis Bezoar.

Deſcription of the ſtone.

THe *Lapis Bezoar* is (ſaith Boetius) a ſtone blackiſh out of a green, about the bigneſſe of a filberd, round, and hollow in the midſt, in the cavity of which is contained a little ſandie powder. Cardane ſaith, it is a ſoft ſtone of an aſhy colour, about the bigneſſe of a filberd, egregiouſly powerfull againſt all venoms.

Cardan. de lap. lib. 7.

Andr. Bacc. lib. de nat. gemm. c. 34.

Andr. Baccius ſaith, that the *Bezoar* ſtones are externally rough, of a green colour, wch out of a brown is reddiſh, as if it was partly tinctured with redneſſe by bloud, and partly with an humour from the creature in which it is found. Claudius Richardus in his deſcription of this ſtone *ad Archiepiſc. Strigonienſem*, ſaith, The *Bezoar* is a round long ſtone, in form like an acorn without its cup, outwardly like poliſht iron, but inwardly of an aſhy colour. It is not very ponderous, becauſe full of pores, and therefore it is eaſily broken. It hath no arenoſitie or harſh ſandineſſe at all with it; if it be taken betwixt the teeth, it doth diſſolve like a cruſt of bread, ſoftened with the ſalivous humour of the mouth: it hath in it no ſavour as ſome ſay, but Richardus ſaith, it hath with it a gratefull ſavour. It is generated in the ſtomach of a wild goat in the Spring-time, and in Summer-time, of the juyce of ſuch herbs as they then live upon; at which times onely theſe ſtones are to be found in theſe creatures.

Deſcription of the creature in which the Bezoar is found.

The creature in which they are found is of the bigneſſe of a goat, which hath long yellowiſh hair, as

as fine as cotton. So Baccius: but Wecker *in lib. de lap. pretioſis* ſaith, that the creature of which the *Bezoar* cometh, is a kind of a goat which is found in Perſia, ſometimes *ruſi coloris*, that is of a yellowiſh red colour, and ſometimes of another colour; one of theſe creatures of the yellowiſh red colour, he ſaith he himſelf ſaw at Goa.

Of its adulteration.

This ſtone being a ſtone of value, it is to be feared, ſaith Andreas Baccius, leaſt merchants for lucre ſake ſhould adulterate it; which adulterations he ſaith may thus be diſcovered: the naturall *Bezoars* are rude, unequall, unpoliſhed, as thoſe ſtones that are found in the bladder of a man: theſe he ſaith will leave no tincture upon the palm of the hand, if they be there rubbed with a little moiſture from the mouth; but the artificiall ones will leave a tincture if they be ſo rubbed. The adulterate ones or artificiall ones are alſo made in form like a kidney or a pigeons egg, and theſe are externally ſmooth and poliſhed, and they being broken, their pieces are hard *inſtar terræ coctæ* or *gypſi*, that is, like clay or earth dryed and hardened by the power of the heat of the fire.

Boetius ſaith that the artificiall or factitious *Bezoar* doth uſually contain in its cavity either chaff or herbs, and ſometimes like ſmall ſeeds.

A ſure way to try a factitious one is this, give ſome few grains of it to a dog or ſuch like creature that hath taken poyſon, and if it be a true *Bezoar*, it will quickly diſcover its vertue in prevailing againſt the poyſon; if otherwiſe, its want of vertue, power

and prevalency will very eaſily diſcover it to be not of nature, but of art.

It is reported of the eyes of the *Hyæna* that they are of a ſtony ſubſtance; Pliny taketh the *Bezoar-ſtones* ſaith Martinus Rulandus for theſe, and therefore calleth them *gemmæ Hyæniæ.* Martinus Rulandus taketh the *Bezoar* for the congealed tears of a Deare: The Eaſtern Deare he ſaith in the Spring time are wont to ſearch the Caverns for ſerpents, which when they find, they are wont to ſnuff them up into their noſtrils and thus purge themſelves of their annuall diſtempers; which ſo ſoon as they have ſnuffed up or eaten, ſtrait-way they flie to the rivers or waters, and in them overwhelm themſelves to the very head, ſo long, as till they perceive the power and force of the venome of the ſerpents which they have taken to be overcome: In this mean ſeaſon by the power and force of the venome, their eyes ſhed forth abundance of tears which are coagulated and congealed about them; theſe coagulated dryed tears Martinus Rulandus calleth the *Bezoar,* that ſoveraign medicine and antidote againſt all poyſons.

Its names.

The Hebrews call it בלזאר, that is, *Dominus veneni.* The Caldeans call it by the ſame name. It is thus called by the Hebrews and Chaldeans from Bel *Dominus*, and zaar *venenum:* becauſe it doth bear ſway over poyſons, and tame and maſter their malignity and unbridled violence. It is thought by ſome, to have its name from the Perſian word *Pazar;*

or

or *Pazan*, which ſignifieth a goat. The Arabians call it *Hager Bezaar*, that is, *Lapis Bezaar*, *v. Serap. lib. agg. c. Hager-bezaar.* In Latine *Lapis Bezoar* and *Bezaar*; and ſo alſo in Engliſh.

The kinds of it.

Boetius ſaith that there are 1. *Bezoars* that are black. 2. *Bezoar-ſtones* that are yellowiſh. 3. *Bezoar-ſtones* that are browniſh. 4. *Bezoar-ſtones* that are greeniſh. 5. *Bezoar-ſtones* that are blackiſh out of a green.

The greeniſh ones, and thoſe that are black out of a green are the beſt of all others, theſe if they be held to the tongue or put into water, will ſo diſſolve that there ſhall be nothing of ſand remaining. Theſe and the other are all hollow in the midſt, and have a little ſandy powder or duſt wch they contain in their cavity, which powder will diſſolve even as the ſtone. *The beſt Bezoar-ſtones.*

The places.

This ſtone is found in the *Eaſt-Indies*, and alſo in the *Weſt-Indies*. In the *Eaſt-Indies* in theſe parts, in *Perſia*, *India*, *China*, *Cathay*; it is brought to *Conſtantinople* out of *Perſia*, and by *Calecuth* to *Portugal*. It is found in *Peru* and other parts of *America* or the *Weſt-Indies*.

Of its nature and properties.

Claudius Richardus in his epiſtle where he deſcribeth this ſtone *ad Archiepiſcopum Strigonienſem*, (which epiſtle may be read *in Andreæ Baccii lib. de nat. gemmar.*) maketh mention of one *Dominus*

Scander a noble man who belonged to the Emperour, that being troubled with a very grievous disease at the seventy fifth year of his age, was cured by the onely use of *Bezoar* taken in the quantitie of five grains in a spoonfull of wine. The same Authour saith, that *D. D. Staphylus* was cured of an acute fever joyned with malignity, by the use of seven grains of this stone in a spoonfull of wine; half an houre after the taking of which, he took half the yolk of an egg; about an hour after the taking of which, he took a good draught of the whey of goats milk, as having eaten very little for fifteen dayes together; and there followed upon this, a purgation for six times, of much cholerick matter.

It is supposed that no other remedy is so forcible against poyson as is this.

The dose of it is usually four grains, more or lesse either in Carduus water, Baulm water, or Clove-gylo-flower water.

Anselmus Boetius saith that the powder contained in the cavity of the stone, is of more force then the stone it self.

It is used against palpitations of the heart, against melancholies, against quartan fevers, against epilepsies, against venoms, contagions, and all pestilentiall diseases, and against all chronick and diuturn diseases.

Cardanus saith of the *Bezoar*, that it is *lapis ab omnibus laudatus, & à nemine fermè cognitus*, that is, much extolled in the mouthes of all men, but known to very few; which (saith he) Scribonius Largus though Cesars, or the Emperours Physician, writeth

to

to be the tears of Deares found in Sicily, when as it is manifeſt that it is found in Pely a Countrey of the Eaſt-Indies. Of which ſaith Baccius, though the originall of it be not fully manifeſt to us, yet the effects and admirable operations of it hath many times been confirmed to us by experience, and ought not therefore to be doubted of us: * yea rather ſaith he, in my judgement it is a very wholſome, bleſſed and friendly medicine to humane nature, diſcovering its wonderfull operations, by an unſpeakable ſympathy, and not becauſe it is either hot or moiſt, or cold or dry, for it is inſipid and void of all taſt and ſavour. The greateſt doſe of it he ſaith, is the weight of ten grains of wheat in its ordinary diſpenſation; and doubts not but it may be taken without perill even of thoſe that are in health, in the weight of one or two ſcruples.

* *Andr. Bacc. c. 35. de Nat. Gem.*

The great Turk is wont to take it often every year though he be never ſo healthfull. *Hiſtory.*

It is given to children againſt worms, and in malignant fevers, ſaith Montanus and Amatus. It is ſaid to be good in almoſt all diſeaſes, eſpecially in maligne, contagious diſeaſes, and venomous.

Its dignitie and value.

It is of great eſteem amongſt Princes and great men, for the admirable vertues which are taken to be in it, in ſo much as one of the biggeſt of the beſt may be ſold at the pleaſure of the poſſeſſour. Of ſo great eſteem it hath been, as that Almirama a great Prince of Arabia, being cured of a mortall diſeaſe by it, did afterwards give for one of the beſt of

of theſe ſtones, a great, magnifick, princely houſe of his which he had at Corduba, as is affirmed by Authours.

The ſmall ones, ſaith Boetius, which are not of greater weight then a drachme, are ſold in the lower Germanie for two ducats apiece.

CHAP. LIII.

Of the ſtone in the gall of an Ox.

THere is, ſaith Anſelm. Boetius, a ſtone of an obſcure yellowiſh colour, which is ſaid to be found in the gall of an Ox, and to be good againſt poyſons.

CHAP. LIIII.

Of the Aetite or Eagle-ſtone.

Deſcription of the ſtone.

THe *Aetite* is a white ſtone which is found in the neaſt of an Eagle, about the bigneſſe of a Peach or Apricock: it is weighty and hath an hollowneſſe or cavitie in it, in which is contained an hard ſtone like a *Cryſtall*, called *Callimus*.

It is reported of the Eagle, that it bringeth this ſtone into her neaſt, to help her the more eaſily to lay. So Boetius. Renodeus *lib. 2. ſect. 2. de materia medica*, ſaith, that ſome think that the Eagles bring theſe ſtones into their neaſts, to temper the heat of their eggs: others for its colours ſake, as Rulandus.

Of its names.

In Greek it is called ἀετὸς. In Latine *Aetites*, and *lapis Erodialis*, *vel Aquileius*, *& Enydros*, which as the

the other kinds are pregnant either with gravell, or earth, or with a *Cryſtall* ſtone; ſo is this with water: inſomuch as if it be put (ſaith Rulandus) into a warm place, it will ſweat. Hence theſe verſes,

Perpetui fletûs lacrymis diſtillat Enydros,
Qui veluti ex pleni fontis ſcaturigine manat. that is,
Enydros tears eternall doth diſtill,
From it as from a fountain they do drill.

It is alſo in Latine called *Lapis pregnans*, becauſe of the matter which it doth contain in its cavity. In Germane *ein adlerſtein*: in Engliſh the *Aetite* or *Eagle-ſtone*

Of its kinds.

Martinus Rulandus ſpeaketh of ſix kinds of this ſtone. The firſt of which kinds he ſaith, *Pregnans eſt lapide*, inſomuch as it being ſhaken, doth ſound as if it had a ſtone in the wombe of it, that is, in the cavity or midſt of it. This kind of the *Aetite* is a round ſtone, and hollow as a nutgall.

2. The ſecond kind is pregnant with earth, or a whitiſh clay; it is called *Ægyptitis*, and of Dioſcorides *Geodes gemma*.

3. The third kind is pregnant with water. Of this Plinie *lib.* 37. *c.* 11. and Solinus *c.* 40. ſay, that it is alwayes of an abſolute rotundity, and of a ſmooth candour or whiteneſſe; but it being moved, there floweth too and fro a liquor, after the ſame manner as the liquor of an egge will move too and fro within it, if the egge be moved. Solinus ſaith of this *Aetite* called *Enydros*, that it doth ſo abundantly ſweat, as that a man would think it did contain in it a ſpringing fountain of water.

4. The fourth kind is pregnant with gravell or little stones.

5. The fifth kind is pregnant with a *Chelonitis*.

6. The sixth kind is pregnant with a white flint: one of this kind Martinus Rulandus saith he found at *Albis*, which when he had opened, he found in the matrice, wombe, or cavity of it, a white flint, round and long, and very hard.

Plinie reckoneth foure kinds of *Aetites*. 1. A little soft *Aetite*, which containeth in its wombe or matrice a pleasant, white, clayie substance: This is supposed to be a female *Aetite*; and is easily broken. This is that stone which is called λιθος *Dioscoridis*, or the *Geode of Dioscorides*: in Germane *Erdstein*.

2. The second kind he saith is like unto the first, but bigger and easily broken; and this containeth in its cavity a pleasant sand, or little stones like flints, or the *Conchylis*, which are little fishes like muscles.

3. The third kind are called *Taphiusius*; this is white and round, and found in rivers, and containeth in its wombe or matrice that beautifull *Crystall* stone which is called *Callimus*.

4. The fourth kind is taken for a male kind, this is very hard, and like unto a nutgall: this containeth in its wombe or matrice a hard reddish stone. This stone hath been of great esteem with Dioscorides.

Andr. Baccius saith, that some of these stones are found of the bigness of Peaches, others of Apricocks, others in the bigness of Pomegranates, and others of Melons.

Of the places.

The first kind, saith Rulandus, are found in *Sala*.

and

and *Albis*: and in a countrey whith the Germanes call *Die Steuermarck*. The ſecond of this kind are found in *Egypt*, and in *Dreſden* in *Miſnia*, and in *Saxonie*. The other kinds are found in *Albis*, and the former places.

Plinies firſt kind is found in *Africa*. The ſecond in *Cyprus*. The third in *Taphiuſſa* neare *Leucas*. The fourth in *Arabia*.

Of its properties and vertues.

This ſtone is ſaid to be good to facilitate the *partus*, and to cauſe ſpeedy deliverance, if ſo be that it be bound to the left thigh of the woman in travail; and this it doth by an attractive facultie, very powerfully and with ſo much force, as that if it be not removed upon the deliverance of the child, or birth, it will endanger the *deſcenſus uteri*. Franciſcus Valeriola a French Phyſician, very erudite and learned, maketh mention of a ſtrange accident that happened at *Valentia*, to the wife of *Ponſonus Robertus* a citizen of that citie: The time of her labour being come, to facilitate her bringing forth, there was tied to her thigh a great *Aetite* ſtone, which through the forgetfulneſſe and imprudence of thoſe that tied the ſtone to her thigh, was left tied in the foreſaid place, after the woman had brought forth her child; which remaining ſo ſome few houres, cauſed a *lapſus* or *deſcenſus uteri*, and through this in concluſion the death of the ſick partie. *Hiſtory.* *Andr. Bac c. 38. de N Gem.*

It is likewiſe reported of this ſtone, that if it be bound to the left arm *gravidæ mulieris*, of a woman with child, that it will hinder abortion and all miſcar-

riage of her birth, and the *lapsus* or *descensus uteri*.

It is taken to be of a dry facultie, and endued with astringency. If it be worn upon the stomach, or betwixt the breasts, it is said of it, that it will strengthen a woman for the retaining of the birth, and delay the bringing forth. Some are of opinion that it hath a power of procuring love, of encreasing riches, and of making men victorious. Dioscorides saith that this stone hath a power of detecting thefts, if it be given to the party suspected to be eaten in bread. Hence arose this Proverb, *Aetitium panis huic porrigendus*, or, *Give him some of the Aetitick bread to eat.*

History. Petr. Bellonius *observ. l.* 20. *c.* 23. saith, that the Greek Monks called *Caloieri*, were wont superstitiously and wretchedly so to use this stone. The manner of it was this; They called together the suspected persons, and gave them some of the bread knead with the powder of this stone without any leaven at all in it, in such a proportion or quantitie as that they might well swallow, of which they gave thrice to every person, and in the meantime they did murmure over many words, which charms by the power of the devil, their grand agent, was wont to work so effectually the third time, as that the bread would stick in the throat of the suspected person, and choak him: a remedie a thousand times worse then the disease. The necessitated person stealeth to supply his necessities, and these wicked wretches, to discover his theft, engage with, and take counsell of the devill to destroy him body and souk. They say that this stone driveth away serpents, but here I am sure is fell into the hands of serpents, even of a generation of vipers,

vipers, who made uſe of it to work the work of the old ſerpent, in the deſtruction of body and ſoul of man.

The Eagles being mindfull of the ſecurity of their young, are wont in the building of their neſts ever to make up their ſtructures with theſe ſtones; by this means hoping to ſecure their young from the annoiances of ſerpents. So ſaith Philoſtratus *lib.* 2. *c.* 55. *de vita Apollonii.*

CHAP. LV.

Of the Hematite or Bloud-ſtone.

THe *Hematite* is a common ſtone of an obſcure red colour; ſo called from the Greek word αἷμα, which ſignifieth *ſanguis* or bloud, and that not for its likeneſſe only, but alſo for its uſe; for as ſaith Dioſcorides *lib.* 5. this ſtone hath a power of ſtopping fluxes of bloud. *Deſcription of the ſtone.*

Its names.

In Greek Αἱματίτης. In Latine *Hæmatites.* In Arabick *Sedeneg.* In Germane *Blutſtein.* In Engliſh the *Bloud-ſtone.*

Of the kinds of it.

The *Hematite* is of kin to the *Load-ſtone*, and ſo of kin, as that Pliny *l.* 36. *c.* 16. calleth *Hæmatitem, Magnetem*, that is, an *Hematite* a *Load-ſtone.*

Of the *Hematites*, Rulandus maketh ſix kinds.

1. *Hæmatites foſſilis*, of a full red colour, which is very much commended of Dioſcorides. *l.* 5. *c.* 90.

2. *Hæmatites niger* yielding a juice like saffron, this is much harder then the former, of this Rulandus saith, that without doubt, it is the *gemma* or *lapis Medus niger Alberti*, which being broken yieldeth a juice like in colour to saffron.

Gemma, seu lapis Medus.

3. *Hæmatites fossilis purpureus* or the purple *Hematite*, which is found in mines.

4. *Hæmatites fossilis pulcherrimus* or the fair *Hematite*, this is used of Gold-smiths for the polishing of gemms: this likewise saith Rulandus is black, and as it were turbinated.

5. *Fossilis niger trichurus*, so called of Pliny *l.* 37. *c.* 10. because it being rubbed upon a whetstone doth yield three colours.

6. *Hæmatites pulcherrimus* or the fair *Hematite*, which resembleth in form a discovered brain, which form, saith Rulandus *l. de Lap.* I cannot sufficiently admire.

Pliny *l.* 36. *c.* 20. and *c.* 16. speaketh of these kinds of *Hæmatites*.

2. *Æthiopicus Hæmatites* which is profitable to the eyes; this is reckoned of the number of those that are called *Pancrestoi*, that is, of the number of those stones, or medicines which are said to be good against all diseases.

2. *Androdamanta*, or *Atrodamanta Hæmatites*, which is of a notable hardnesse and weight, of a black colour drawing iron like a *Load-stone*, and being rubbed upon a whet-stone it doth yield a juice red like bloud; to this responds the *Trichurus* of Rulandus.

3. *Arabicus*, rendring very little moisture upon the

the whet-ſtone, & that of a ſaffroniſh colour. To this reſpondeth Rulandus his ſecond kind of *Hematite*.

4. *Hæmatites Elatites*, ſo called, whilſt it doth remain * crude; but *coctus, dicitur alio nomine*, viz. *miles*; this is ſaid to be good againſt *ambuſta* or burnings, and it is much more profitable then the *rubrica* or okre, for all thoſe evils againſt which the okre is uſed.

* *Pliny l. 1. c. 16. Elatites cùm crudus eſt. Coctus autem dicitur Miles*

5. *Schiſtos* which rendereth a black juice on the whet-ſtone.

Of the manner of calcining theſe ſtones, and of the adulterating of them, and of their uſe Pliny writeth, and ſo likewiſe Dioſcorides. *L.C.*

Of the places.

The *Hematites* are found in *Egypt*; *Goſſaria, Media, Phaſis, Haßia, Geurus, Anneberge, Salfeldia, Africa*; in *Cheruſcis, Northuſia, Haſgeroda, Æthiopia, Arabia*; in *Fudetis montibus*, in *Salburgia*, in *Iena*, *Lybia*, and *Hiſpania*.

Boetius ſaith of the *Hematites* that they are ſometimes of the colour of *Minium*, ſometimes black, ſometimes yellow, ſometimes of the colour of iron, and ſometimes they are found to have many bright ſtreaks like Antimonie. *p.* 191. It is, ſaith Boetius, uſually found about the *Okre* or *Iron-mines*; and of ſome the *Load-ſtone* is taken for an *Hematite*.

Of its nature and properties.

It is ſuppoſed to be of a cold and dry quality.

Trallianus ſaith that the powder of the *Hematite* given

given from a ʒ. to iiij ʒ. is of great power and force to cure a *Phthiſis* or ulcer of the lungs, or the Αιμοπτυσις, that is, a ſpitting of bloud.

CHAP. LVI.

Of the Smyris or Emeri.

Deſcription of the ſtone.

THe *Smyris* is a very hard ſtone of the colour of the ruſt of iron, with aſperity and roughneſſe joyned to its hardneſſe; it tendeth in colour ſomewhat to a blackneſſe. Engravers of rings and ſuch like artificers are wont to uſe this ſtone to expurge, and ſometimes to cut other ſtones withall.

Its names.

In Greek Σμυελς. In Latine *Smyris: eſt lapis quo gemmas annularii exterunt: Dioſcor. lib. 5. c. 116.* In Dutch *Schmergel.* In Italian *Smeriglio.* In French *Emeri.* In Engliſh *Emeri.*

Its uſe.

It is uſed ordinarily to cut glaſſe withall, and to burniſh jewels, and arms withall.

CHAP. LVII.

Of the Lapis Samius, or Terra Samia.

Deſcription of the ſtone.

THe *Lapis Samius*, or rather *Terra Samia*, is a ſoft white light earth which is eaſily broken with the hand, and if it be touched with the tongue it ſticketh very cloſe to it; even like glew, ſaith Rulandus.

Its

Its names.

It is called *Samius lapis*, or *Samia terra* from the land from whence it is brought. It is alſo of ſome called *Collyrion.*

Its kinds.

Dioſcorides writeth of two kinds of this earth.

1. White and not weighty deſcribed as before, called by ſome *Collyrion.*

2. *Cruſtacea* or of a cruſty ſubſtance thick after the manner of whet-ſtones. Theſe being calcined and waſhed like the *Eretriades*, are thought to be of the ſame vertues, power, and force.

Its vertues.

Lapis Samius is of an aſtringent faculty, and cold; therefore it is eſteemed good againſt all fluxes, and inflammations of the *Teſtes* and breaſts; and againſt poyſons and ſtingings of ſerpents; it cureth thoſe that have taken Cantharides, ſaith Nicander in his *Alexipharmica*; it is uſed by gold-ſmiths to poliſh gold withall, and to make it look clear and fair. *Dioſcor. L. C. Plin. l. 36. c. 21.*

CHAP. LVIII.

Of the Selenites, or the Moon-ſtone.

THe *Selenites* ſaith Andreas Baccius, is a kind of a gemm which doth contain in it the image of the Moon, and it doth repreſent it increaſing and decreaſing according to the increaſe and decreaſe of the Moon in its monethly changes. *Deſcription of the ſtone.*

Of its names.

In Greek Σελωσῖα & Σελωὶς; that is as much as to say the splendour of the Moon, or a beam of the Moon; Bacc. Annotat. upon *c.* 23. *l. de nat. gemm.* In the same place also for its milkish colour which he saith is endued with pellucidness, it is called ἀφρόσελὶς that is, *spuma Lunæ*. The Romanes call it *Lunaris*. Some take it for a kind of *Marble*; others for a kind of the *Specularis lapis*. It may be, the earth *Seluniſia* which is of a bright whiteness may be the same with this.

Dioscorides saith it is found in *Arabia*; and that it is endued with very great vertues; as of making trees fruitfull, and of curing epilepsies: he saith that in the night it will illustrate the place that is next to it: yet not by any transmission of light, but by the collection of light into its self.

CHAP. LIX.

Of Gypsum and Talcum.

THis as I suppose is that which is called *Playster of Paris*, which is very well known in many places for its use in building.

CHAP. LX.

Of the Pumex or Pumeise-stone.

THe *Pumeise-stone* is a common spongy-stone well known to all men. The Arabians call it *Famechi* vel *fenec*. It is also called *Lapis Vulcani*.

CHAP.

CHAP. LXI.

Of Lapis Judaicus, or the Jew-ſtone.

THis ſtone is roundiſh in ſhape, like unto an olive, of colour white, and ſometimes browniſh, and is eaſily broken. *Ætius* calleth it *Lapis Syriacus*, others *Phrenicites*. Plinie for its fragilitie calleth it *Tecolithos*. It is found in India, and in Sileſia. It is eſteemed good againſt the ſtone in the bladder and reins, Boetius and Dioſcorides. *Deſcription of the ſtone.*

CHAP. LXII.

Of the Morochthus.

THe *Morochthus* is a white ſoft ſtone. It is good to make linen garments white withall, if it be firſt diſſolved. It is ſaid to be endued with a power of opening the pores of the body. Dioſcorides ſaith it is found in Egypt; and Georg. Agricola ſaith it is found in *Saxony*, neare *Heldeſhim*, where it is called *Milchſtein*.

The *Galactite* is a kind of it, which is alſo called *Galaxius*: this is found in *Egypt*. The linen drapers with this ſtone do uſe to make their cloth white.

CHAP. LXIII.

Of the Magnes or Load-ſtone.

THe *Magnes* or *Loadſtone* is a ſtone of a browniſh colour, with a tendencie to a ſky-colour, thick and not very heavy, which as ſaith Rulandus, doth by its own proper power and innate vertue, draw *Deſcription of the ſtone.*

iron unto its self. Boetius and Dioscorides say, that this which is browniſh with a tendencie to a sky-colour, is the beſt. But Mart. Rulandus saith that the beſt is alwayes of a sky-colour.

Its adulteration.

There is no fear of the adulterating of this stone, if naturally it be endued with such power, vertue, and attractive faculties as Authours relate and write of it; for though it is not altogether impossible to make by art a *Loadstone* in colour, form, and substance; yet is it altogether impoſsible for any man, to adde such power, vertue, and attraction to it, as naturally the true *Loadstone* is said to be endued withall. Though I confesse an Impostour may delude an unwary buyer of this stone, by an acquired attractive faculty, *scilicet mediante dæmonis pro tempore potestate.*

Its names.

In Greek Σιδηρίτης and Ηρακλειος λιθος. In Latine Galen, Nicander, and Plinie call it *Magnes*, which name by the two last named Authours is attributed to it, from him who was the first finder of its attractive power; namely, *Magnes* a shepherd of India, who was wont to keep his flocks about those mountains in India, where there were abundance of these stones. *Herculeus lapis* it is also called from its predominant power, by which it is said to draw iron to it self, which tameth all things. *Heracleus lapis* it is also called from a citie of *Lydia* called *Heraclea* by some and by others *Magnesia*, where the best of these stones are said to be found: hence this stone as some think had

had its name of *Magnes*, and hence theſe verſes of Lucretius;

Quem Magneta vocant patrio de nomine Graii,
Magnetum quia ſit patriis in montibus ortus.

Callimachus calleth it *Heracleotis*. Plinie *Siderites*. In Germane, *Magneth*. In Saxon *ein Segelſtein*, and in Italian *Calamita Piodra*. It is from its uſe called *Lapis Nauticus*. In Engliſh the *Load-ſtone*.

The kinds of it.

Albertus Magnus *l.* 2. *Metal. tract.* 3. *c.* 6. ſaith, that in that age in which Ariſtotle lived, there were two kinds of *Load-ſtones* known: one kind which did direct or draw iron to the North, another kind which did direct or draw iron to the South. Plinie *L. C.* ſpeaketh of five kinds of this ſtone: 1. *Magnes Æthiopicus*, which hath power not onely of drawing iron to it ſelf, but alſo of an other *Load-ſtone:* hence theſe verſes of Silius: *Plin. lib.* 36. *cap.* 16.

Venere Æthiopes, gens haud incognita Nilo,
Qui Magneta ſecant: ſolis honor ille metalli,
Incoctum chalybem vicino ducere ſaxo.

2. The ſecond kind is called *Magneſiacus*, it is in colour of a yellowiſh red and black.

3. The third is called *Echius*, and it is more of a yellowiſh red then black.

4. The fourth kind is a feminine *Load-ſtone*, it is black, and of no uſe.

5. The fifth kind is a white one of very little moment.

Cardanus *l. de lap.* maketh three kinds of this ſtone. 1. *Ferrugineus*, which is ſo called as being of

an iron colour. 2. *Candidus.* 3. *Candidus* distinguisht with light *ferrugineous* veins.

The places.

It is found in *Æthiopia, Macedonia, Bœotia, Alexandria, Troas.* In *Heraclea Lydiæ*, in *Germany*, in *Missnia*; in *Italie* in the mountains of *Viterbium*; in many iron mines, and the places neare adjoyning.

Its nature and faculties.

The wisdome of man which hath much searcht and enquired into the nature of this stone, hath attributed its attractive power to the planets, and to the influences of the starres; and saith that it doth receive its vertue from *Luna* and *Venus*, which are both found shining *in Cauda Ursæ minoris, in gradu 29. Virginis*; *Vide Andr. Bacc. cap. 2. de nat. Gemm.*

The cause of the attractive facultie of this stone, is, as Authours say, that it may provide it self with a *pabulum* or fit nourishment of its substance; for this cause saith Cardane, it doth draw iron to it self: for stones live, and have need of nourishment for their augmentation and conservation. The cause of such mutuall embraces, Boetius also doth attribute to their likenes of nature, by reason of which they are pleased to be assimilated into one substance and likenesse: therefore doth Boetius say of the *Loadstone*, that it doth draw the iron as *sibi simile*, or for its conservatiõ or nourishment: for if you cover over the *Load-stone* with filings of iron, the *Load-stone* will grow more lively, as receiving a nourishment from such filings; and the residue of the filings will be changed into rust.

Card. lib. 7. de lap.

ruſt. Martinus Rulandus ſaith, that as by a naturall power and force, it doth draw iron and liquor of glaſſe, and concord with theſe; ſo likewiſe by an antipathy and diſcord it doth mainly diſagree with onions and garlick, and with a *Diamond*; inſomuch as if theſe be but within the touch of a *Load-ſtone*, or neare the *Load-ſtone*, they will hinder all its attractive power, and rob it of all its vertue of drawing iron. Renodeus (*l. de mat. Medic.*) aſſerteth the ſame. Albertus Magnus ſaith there is a *Load-ſtone* to be found, which with one point draweth iron, and with another point doth drive it away. The ſame Albertus ſaith, That the Emperour Frederick had a *Load-ſtone*, which did not draw iron, but was drawn of iron, even as a common *Load-ſtone* doth draw iron. Serapion ſaith (*l. aggreg. c. Hagger. Abnantes, ſive Almagritos*) *eſſe mineram*, or that there is a minerall of this kind in the maritime parts that lie neare India, of ſo great a quantitie, as that they are forc'd to uſe, by reaſon of it, no other nails in the building of their ſhips but wooden nayls. *Hiſtory.*

It is wonderfull to ſee how the Needle of a Compaſſe, being toucht with a *Load-ſtone*, doth cauſe the maritime Card to point North and South: And it is not more wonderfull to behold this, then it is difficult to raiſe a ſatisfactorie reaſon from the nature of the thing concerning it.

Merchants and Mariners in their paſſages under the line, have obſerved, that on this ſide the line the Card doth alwayes point out the North; but when they are once paſt the Equinoctiall line, and are come nearer to the Antarctick pole, they ſay it forſaketh *Obſervation.*

the

the North, and pointeth out onely the South: and that for this reaſon, becauſe (ſay they) it doth not then ſo much ſhew the *Plagæ* or climates, as the Pole, and alwayes that Pole which is neareſt to it. The cauſe of this ſtrange variation of the Sea-card in the paſſage under the line, is ſuppoſed to ariſe from a Magnetick mountain, which in whatſoever place it is, it is obſerved by the Sea-card. (See *Boet. cap. de Magnet.*) Upon theſe grounds and reaſons, it is to be ſuppoſed that there is another *Magnetick* mountain towards the Antarctick Pole, directly oppoſite to that which is towards the Arctick Pole, which doth convey its attractive vertue at ſo great a diſtance, to ſuch or ſuch a ſhip on the other * ſide the line, to the wonderfull affecting of its Needle, and ſtrange variation and alteration of its Card; inſomuch as now it pointeth full South, whereas before it pointed full North. And that the vertue of this *Magnetick* mountain, ſhould at ſo great a diſtance be transferred from it ſelf, in the utmoſt extremities of the Antarctick Pole, to the Needle of the Card of that ſhip, which is now very neare the Equinoctiall line, is more wonderfull then the ſudden variation of the Card.

Reaſon.

**That is in reſpect of us that live in theſe Northern climates.*

Its vertue and uſe.

The *Load-ſtone* calcined is ſaid to be of like nature with the *Hematite*. Galen and Dioſcorides ſay it hath the ſame vertues. It is ſaid of this ſtone, that it is good againſt the head-ach, convulſions, and poyſons: and that it cauſeth eaſie delivery, and procureth love betwixt man and wife, and preſerveth peace

peace and concord amongſt friends, and that it driveth away fears and increaſeth wiſdome.

Cardanus *l.7. de lap.* ſaith, that Ariſtotle that great inquirer into nature, was altogether unknowing of the maritime uſe of this ſtone, and of that uſe which is made of the ſea-card by vertue of this ſtone; and that Galen and Alexander Aphrodiſius, two great inquirers into the ſecrets of nature, have not ſo much as once made mention of the wonderfull nature of this ſtone. The maritime uſe of it was alſo unkown to the Romanes, and that was the reaſon ſaith Cardane, that they ſuffered ſo many ſhipwracks. It is reported of Mahomet, that the iron tombe in which he was embalmed was by the attractive vertue of a great *Load-ſtone* drawn up from the earth, and continued in that wonderfull poſture for many years together. See Herberts Travels. *Hiſtory.*

CHAP. LXIIII.

Of the Belemnites, or Lapis Lincis, or Dactylus Ideus.

THis ſtone is in length a finger, in form and thickneſſe like the end of an arrow, outwardly for the moſt part of a brown and duskiſh colour, inwardly it is hollow, ſometimes full of a medullous ſubſtance like the pith of wood; ſometimes this cavity is full of a chalky ſubſtance, ſometimes of ſand. From the *medulla* or ſubſtance in this cavity, which is the centre of this ſtone, if you break the ſtone you ſhall perceive ſmall lines like beams to dart *Deſcription of the ſtone.*

themſelves forth unto the circumference. It is called in Greek Βέλεμνον from its form of an arrow.

Of its kinds.

Of theſe ſtones there are ſome externally of a white colour, ſome of a duskiſh colour, and ſome pellucid like *Amber* in colour.

If you take ſome of them and put them into the fire, they will ſmell like burned bones or horns, and ſometimes like Cats piſſe: the white ones which are found in *Heildſhem* with a black hard ſtone in them, ſmell like *Amber*.

Cardanus calleth this ſtone *Belemnites*, and ſaith it is found in form like an arrow, and hath in the whole length of it a fiſſure or cavity, which containeth in it a ſtone joyned with a golden armature to the ſtone containing it; and that this ſtone is not, as ſome think, the *Lyncurius*.

See Card. l. 7. de ſubtil.

The place.

It is found in *Boruſſia*, and in *Pomerania*, in many places of *Germany* and *England*: It is found in mount *Ida*, and from thence it hath its name of *Dactylus Ideus*: It is found in very great plenty about *Wittenberg*.

Its vertues.

It is reported of it that if its powder be drunk in ſome convenient liquour, it will prohibit luſtfull dreams, and witchcrafts.

The Saxon and Spaniſh Phyſicians take it to be of

of the ſame nature with the *lapis Judaicus*, and therefore they uſe it to break the ſtone withall.

In *officinis* this ſtone is commonly taken for *lapis Lyncurius*. *See Matthiolus.*

CHAP. LXV.

Of the Ceraunia.

THe *Ceraunia* ſaith Boetius, is a ſtone which uſually is found five fingers long and three fingers broad, like a wedge; it is of colour like the *Belemnites*, but it is not *ſtriatus*, it hath no ſuch lines as the *Belemnites* have. If theſe ſtones be great they have uſually round holes in them, about the bigneſſe of a mans thumbe, as there are (ſaith Boetius) in a mallet. *Deſcription of the ſtone.*

Of its names.

It hath its name *Ceraunia* from the Greek word Κεραυνὸς, which ſignifieth *fulmen* or lightning, and this name it hath becauſe it is ſuppoſed to fall from heaven with the lightening. In Germane it is called *Straalhamer, Donerſtein, Schlegel, Donnerkeil, Stralpfeil, Stral ſtein*, and *Groſ-krottenſtein*. In Italian *Sagetta.*

Its kinds.

Theſe ſtones are ſmooth ſtones, they are ſometimes found round and ſometimes long: ſometimes in the forms of a wedge, diſh, mallet, or plow-ſhare, or of an ax, and in divers other forms. Of theſe,

Some are white and pellucid. Some brown. Some black. Some reddiſh.

It is reported of this ſtone that it doth ſecure thoſe that wear it, and their houſes from lightning; and procures reſt & ſleep; and that it maketh men prevalent over their enemies, and conquerours in warres. See Boetius *C. de Ceraunia.*

CHAP. LXVI.

Of the Chelonitis, Brontia and Ombria.

Deſcription of the ſtone.

THe *Chelonitis* is a ſtone of a yelloviſh colour, which is ſuppoſed to fall with thunder, from heaven; and ſometimes with tempeſts, and ſometimes with rain, in the form ſometimes of a wheel, ſometimes in a hemi-ſpherick form, or a ſemi-globous form, and ſometimes long, in the bigneſſe ſometimes of an egg, more often leſſe.

Its names.

The *Chelonitis* is by Pliny deſcribed to be a pretious ſtone in colour like to a Tortoiſe ſhell: the *lapis Baſonius* and ſome of theſe ſtones are of that colour. This ſtone is called *Brontia* from the Greek word Βροντὴ, that is, *Tonitrus* in Latine, and in Engliſh *Thunder*; and thus it is called becauſe it is ſuppoſed ſometimes to fall with the thunder. It is called *Ombria* from the Greek word Ὀμβρέω *Pluo*, or Ὄμβρος *Imber*; becauſe as it is ſuppoſed ſometimes to fall with thunder, ſo likewiſe ſometimes with a ſhower of rain.

Its

Its kinds.

Theſe ſtones are diverſly diſtinguiſhed according to their colours. Some of them are found to be of a yelloviſh colour. Some of them of a greeniſh colour. And ſome of them of a browniſh colour.

Anſelmus Boetius ſaith, that he thinketh that the ſtone which is called *Ovum anguinum*, differeth only in externall form from *Brontia*. The *lapis Bufonius* or *Garatromo* is called by theſe names of *Brontia* and *Ombria*; as will appear by that which Anſelmus Boetius ſpeaketh in the Chapt. of the *Garatromo:* whom I have in this particular obſerved, as you may ſee, by having recourſe to the thirty ſixt chapter of this our Lapidary.

Of the vertues of the Chelonitis, Brontia and Ombria.

They are ſaid to be of like faculties with the *Ovum Anguinum*, and with the *Lapis Bufonius* or *Garatromo*.

It is reported of theſe ſtones that they are endued with a power and vertue of procuring victory and conqueſt to him that weareth them: other vertues they are ſaid to be endued with, which are the ſame with thoſe of the *Ovum Anguinum* and *Garatromo*.

CHAP. LXVII.

Of the Marble in generall.

THe ſtones that come next in glory to the gemms are the *Marbles*, whoſe pleaſing colour, hard-

neſſe, or perſpicuitie makes them more or leſſe eſteemed.

The *Marbles* are uſually ſtones of great magnitude, very hard and beautifull, and fit for poliſhing and engraving. Their excellent concretion, ſaith Anſelm. Boetius, begets their hardneſſe; and the equabilitie and purity of the matter or ſubſtance of them, begets their excellency of form and beauty. For if the matter be ignoble and various, and of an impure earth, the *Marbles* will be unequall, full of ſcales and hard roughneſſe, and unfit to poliſh.

The *Marbles*, as all other ſtones, are not ſo hard at their firſt taking out of the quarries, as they afterwards are. Theſe ſtones of all other ſtones commonly ſo called, are for equability and purity of matter moſt excellent.

It is by the wiſe inquirers into the ſecrets of nature ſuppoſed, that various exhalations are the cauſes of the varietie of tinctures and colours, which are commonly found in the *ſpecies* of theſe ſtones.

Of its adulteration.

It is no impoſſible thing, nay, a very eaſie thing to adulterate this ſtone, and every *ſpecies* thereof with a fit matter, brought together after the manner of that wherewith thoſe China cups and pots are made, which out of the Eaſtern parts are brought hither to us.

Its Names.

The moſt noble kinds of *Marble* Cardanus *l. de lapid.* doth reckon to be theſe: *Phengitieum*, *Parium*,

um, Zeblicum, Porphyrites, Ophites. In Hebrew the *Marble* is called שיש *Shaiſh*; as 1. Chron. 29. 2. By contraction the Hebrews call it שש, as Eſther 1. 6. עמודי שש ועל גלילי כסף *hoc eſt, ad orbes vel annulos argenteos, & columnas Marmoreas.* The *Marbles* by a generall name are called in Greek μάρμαρος, ἀπὸ τῦ μαρμαίρειν, that is, from their excellent beautie and ſplendour. In Latine, from the Greek, for the ſame cauſe, it is called *Marmor.* In Dutch *Marmelſtein.* Almoſt in all languages it doth retain the ſame name. In Engliſh with a little variation it is called *Marble.*

Its kinds.

Of this ſtone there are divers kinds. Some white, ſome black, ſome green, ſome yellow, ſome brown, and of an aſhie colour, and ſome of divers colours, and ſome very beautifully red. Of all the other kinds, the *Lapis Parius* which is the *white Marble*, and the *lapis Porphyrites* which is the *red Marble*, are the moſt excellent, beautifull, and lovely.

Every one of theſe kinds of *Marble* does admit of diverſe *ſpecies*, ſeverally denominated, ſome from their colour, and ſome from the place of their originall; as afterwards when I do come to ſpeak of *Marbles* in particular, in the order of their ſeverall originall *ſpecies*, I ſhall have occaſion to ſhew.

There are multiplicitie of *ſpecies* of theſe ſtones, and all of them for the moſt part of very exquiſite hardneſſe, and fit for poliſhing. And the greateſt part of the kinds are alſo endued with much beauty, and being fit for polliſhing they are made of very great ornament. There

There is a kind also of this stone which is called *Marmor sectile*, which saith Cardane is indeed a stone like in nature to the *Marble*, *quippe quòd sectilis sit*; but it is of an ashy colour, and of an incredible softnesse, so that for any use, it may like wood be easily parted in sunder with a saw: Some by reason of its obscure colour, referre this to the kinds of flints, but not very advisedly, because it is proper to the flints to be full of scales, like those kinds of *Marbles* which are called *marmora granulata*: neither are the flints at any time found perfectly smooth, no more then are those *marmora* called *granulata* or *squamosa*, nor have they any glory or beauty of the *marble*, nor are they so fit to be cut as that, by reason of their roughnesse, ruggednesse, scalinesse, and unevennesse.

Cardan. lib. lap.

These stones which Cardan calleth *marmora sectilia*, are improperly called *Marmora* or *Marbles*; nor can they well and truly be called *Silices* or *flints*: for if we compare them to the *Marble*, we shall find that they do want all the glory and beautie which is in any of the *species* or kinds of the *Marble*, which their glory and beauty doth crown them with the name of *marmor*: for *à splendendo & rutilando* the Greeks call the *Marbles* by the name of μάρμαρος, and the Latines by the name of *Marmor*, none of which resplendency or refulgencie is found at any time (witnesse Cardane) in this *marmor sectile*: therefore upon these grounds it is that we say and affirm, that this *Marmor* called *sectile*, is not a *Marble*.

Cardan. de lap. l. 7. pag. 378.

Again, if we do compare this stone called *Marmor sectile*, with the flint, it wanteth those *squamæ* which are found in the flints; for the flints are seldome

dome found without ſcales, but the *Marmor ſectile* hath no ſcales. And for this cauſe, ſaith Cardane, *loco citato & allegato*, the *Marmor ſectile* is no flint. Abundance of this kind of *marble* is to be found in Italy about *Venice*.

Of the places in generall.

The *marbles* of the beſt ſort are found in the Eaſtern countreys, and in many parts of *Aſia*, as will appear in our ſpeach or diſcourſe of theſe ſtones in particular: And not leſſe excellent for glory, and beauty, hardneſſe, and ornament, are thoſe which are found in the countreys of *Europe*, as will afterwards likewiſe appeare in the ſequel. And theſe parts of the world are not alone poſſeſt of theſe treaſuries, but we ſhall likewiſe find them by diligent ſearch in many parts of *Africa* and *America*.

Of the uſe of Marbles in generall.

The generall uſe of the *marbles* is very well known to moſt Stone-cutters, or Statuaries; who are wont to fit them for ornament in building, and for the beautifying of great and magnifick ſtructures. To theſe purpoſes, and for theſe uſes we may ſee them employed in the palaces of Kings, in the houſes of Princes, and in thoſe Temples which the Heathen have reared and beautified with theſe ornaments, and then conſecrated to the ſervice of their gods. And in many of our Temples amongſt Chriſtians at this day, we ſee theſe ſtones are uſed in the ſtructures to adorn and beautifie thoſe places withall, which they

have conſecrated to the worſhip of God. The generall uſe of theſe ſtones may alſo be obſerved in cemeteries and mortuaries, where the urns of great men have uſually their duſt and aſhes covered with a *marble*, as a monument and ornament in ſome kind, glorioufly to perpetuate and eternize their memorials, and the remembrance of them upon earth.

Rabbi Salomon writeth, that the uſe of *marble* in the Temple, was much in pillars of the Temple, and for the meaſures of the Temple, and for the pavements of the Temple.

CHAP. LXVIII.

Of the Lapis Parius, or white Marble.

Deſcription of the ſtone.

THe *Lapis Parius* or *white Marble*, is the firſt and beſt of the kinds of *Marble*, it is a very beautifull lovely ſtone, to which for ſingleneſſe of beauty, and unmixt formoſity, none of all the other *ſpecies* of *Marbles* may be compared. It is a ſtone moſt white and very fair, and for this cauſe doth Rulandus and Anſelmus Boetius in the conſideration of theſe ſtones give this the firſt place, as being moſt noble, excellenteſt and beſt of all the other *ſpecies* and kinds of *Marbles*.

Of its adulteration.

Artiſts have a way as of adulterating other beautifull, fair, and noble ſtones, ſo alſo of this, and this they may do with the matter, of which the *China* diſhes are made, and with *Alabaſter*, and with ſuch like

like matter as may well and firmly be compacted, and wrought up by equability of ſubſtance and poliure of parts to the fairneſſe, beauty, and glory of a white *Marble*.

The *China* veſſels of which before in the chapter of the *Sardonyx* mention hath been made, are brought up to that beauty which we ſee them in, by the artificiall working of the fatter part and pureſt of the earth with ſome portion of the powder of the gemm called a *Sardonyx*; and to ſuch like beauty and ſolidneſſe by art may the fatter part of the earth mixt with certain proportions of *Alabaſter* be brought, even to an emulation of the faireſt beauty of the excellenteſt and moſt noble white *Marble*; and I ſee no reaſon but that if this matter be handled by skilfull Artiſts, it may be made as fit for the framing of beautifull veſſels, as that other, out of which the *China* veſſels are made; of which veſſels in fairneſſe and beauty emulating the *Onyx* and *Sardonyx*; of which veſſels, I ſay, for their pleaſing beauty, Mithridates king of Pontus had four thouſand amongſt his other houſhold utenſils.

Its names.

In Greek Παρεῖος. In Latine *Parius*. This name as ſome think, it hath from the Iſland *Parus*; and hence *in Epigrammate* this of the Poet,

Pario Marmore ſtructus, &c.

Others are of opinion that this white *Marble* is called *Parius* by the name of him who was ſometimes an Engraver of this ſtone, namely *Agoracritus Parius*; this *Agoracritus Parius* is that excellent antient

Engraver that firſt made the image of Venus of this ſtone. The Germanes call this ſtone *Waſſermarmelſtein.* It doth appear by Varro that this ſtone in old time was called *Lychnitis*, as being in thoſe dayes much uſed for lamps. In Engliſh the *white Marble.*

The kinds of it.

Rulandus maketh mention of ten kinds of this *Marble.* 1. *Marmor candidum Lunenſe*, which he ſaith is the whiteſt and beſt of all the *white Marbles*, and called by the Dutch *ein weiſs Marmorſtein.* 2. *Candidum Cartarienſe.* 3. A *Patavian* or *Paduan white Marble*, called *Marmor Patavium ſerratile*, becauſe it is a ſtone that is made fit for uſe by ſawing. 4. *Italicum Marmor*, or an *Italian Marble*, ſprinkled amidſt its white with many brown and aſhie coloured veins. 5. *Marmor candidum Ratisbonenſe*, or *the white Marble of Ratisbone*, of this at Ratisbone they are wont to make *tabulæ menſarum* or trenchers withall. Of one of theſe *Marbles* the Altar at Annenberg is made; the whole Altar conſiſteth of but one only ſolid *Marble* of this kind; then this *Marble* there is not a fairer in all Italy. 6. The ſixth kind of *white Marble* is called *Marmor candidiſsimum Carolinum*, becauſe it is found in the Caroline baths. 7. The ſeventh kind of *white Marble* is called *Marmor candidum Hildeſhemium*, from Heildeſhem the place where it is found. This is like in whiteneſſe to ivory. 8. The eighth kind of white *Marble* is called *Marmor candidum Arabicum*; this likewiſe is as the other found of whiteneſſe like to ivory. 9. The ninth kind is found amongſt mettals at Annenberg,

and

and is therefore called *Marmor candidum Annenbergicum metallicum.* 10. The tenth kind of *white Marble* is called *Hildeſhemium cinereum in candido*; this is of an aſhie colour in a white, and in ſmell it is much like the odour of the burning of horn.

Anſelmus Boetius maketh but two kinds of the white *Marble.* Namely, 1. The *lapis Parius*, which is the true *white Marble* and moſt beautifull with an exquiſite hardneſſe. 2. And the *Alabaſtrites* or *Alabaſtrum* or the common *Alabaſter*, which is of no leſſe beauty then the true *white Marble*, yea if this be well poliſhed it is comparable to the *Onyx* for beauty, and carrieth with it a very lovely countenance and pleaſing aſpect: the difference betwixt this and the beſt *white Marble* is only this, that the beſt *white Marble* hath an *exquiſita durities* joyned with its beauty, and the *Alabaſter* is for the moſt part found ſomewhat ſofter and leſſe concocted; yet doth not the *Alabaſter* continue in this ſoftneſſe, but by tract of time, and length of dayes, it groweth harder and harder till it doth attain to the perfection of the beſt and faireſt *white Marble.*

The places.

The *white Marbles* are found in the Iſland called *Parus.* There are of the beſt of theſe ſaith Boetius, found in *Italy* and *Cappadocia*, but ſeldome in the lump bigger then a man. Theſe *Marbles* are alſo found in *Hetruria*; In *Padua*; In *Ratisbone*; In the *Caroline baths*; At *Hildeſhem*; In *Arabia*; At *Annenberg.*

The *Alabaſter* is found in many places of *England*,

of very excellent beauty, and very lovely if it be well polished. Of which we shall have occasion to speak in the next chapter as in its proper place.

Of the faculties, vertues, and use of the White Marbles.

Discourse concerning the faculties and vertues of these stones I must deferre to a better opportunity.

Its use commonly known, is for the most part to be seen in the ornament of magnifick structures, and in monumentall statues.

CHAP. LXIX.

Of the Alabaster.

Description of the stone.

THe *Alabaster* is a beautifull white stone of the kind of *Marbles*; of which vessels or pixes in antient time were wont to be made, as the receptacles of rich and costly oyls and unguents, and indeed these vessels are the best of all others for those purposes; and that first for their strength, for they are stronger then glasse: secondly for their purity, for they are much purer then metals: thirdly for that they do not imbibe or drink in, nor leak, or so easily let forth any pretious liquour which they are the receptacles of; for this cause they are much better then any earthen vessels what ever for such purposes.

The *Alabaster* is a known stone to every one that hath seen Romane edifices.

It is said of the pretious ointment which Mary Magdalene poured upon the head of Christ and anointed

ointed his feet withall, that it was contained in a box of *Alabaſter*, as appeareth in the Goſpel of S. Matthew, *Matth.* 26. 7. *Mark* 14. 3. *John* 11. 2. and 12. 3.

Its names.

In Greek it is called ἀλάβαστρος, and τὸ ἀλάβαστρον, that is, *Alabaſtrum*, which word of the Greeks is derived from α & λαμβάνω and that becauſe *capi non poteſt propter lævorem, ut Dioſcor. lib.* 5. *c.* 153. *Eſt* Ἀλαβαστρίτης λίθος ὁ καλούμενος ὄνυξ, that is, *eſt Alabaſtrites lapis qui appellatur Onyx*, there is a kind of *Alabaſter* which is called an *Onyx*, as appeareth by the fourth and fifth books of Dioſcorides. In Latine it is called *Alabaſtrites & Alabaſtria* from the countrey of *Alabaſtria* whence it is brought, ſo ſaith Martinus Rulandus. In Dutch it is called *Alabaſter ſtein*. In Engliſh *Alabaſter*.

Anſelmus Boetius ſaith it is called *Onyx*, and that it differeth from that pretious ſtone, in ſoftneſſe only. This ſtone doth retain the name of *Alabaſter* in almoſt all tongues and languages.

Its kinds.

Anſelmus Boetius ſaith that ſome make two kinds of this ſtone. Namely the *Alabaſtrites*, and the *Alabaſter*, which do differ only in this, in that the *Alabaſter* is ſo ſoft as that it may be cut with a knife, and the *Alabaſtrites* ſo hard that it cannot be cut.

The *Alabaſter* ſaith Rulandus is a ſtone (well known to the Venetians) of the kinds of *marbles*.

Rulandus ſpeaketh of three kinds of this ſtone.

1. A

1. A white *Alabaſter*, called in Germane *weiſſar Alabaſter ſtein*; of this he ſaith, that in old time they were wont to make the ſhrines and images of Saints; together with the monuments and ſepulchres for the dead.

2. The ſecond kind of *Alabaſter* he ſaith, hath black ſpecks and ſpots, which in Germane is called *Bundſchwarß Alabaſter ſtein.*

3. The third kind he ſaith, is white in a yellowiſh red, and therefore is called *Onyx*; or rather, becauſe it is white in a red; this in Germane is called *rothlecht Alabaſter ſtein*, becauſe it doth repreſent the colour of the nail of a mans hand. Properly of this kind of *Alabaſter*, that of Dioſcorides is to be underſtood; where he ſaith, *Alabaſtrites qui & Onyx dicitur, crematus, duritias cum pice aut reſina diſcutit.*

Of the *Onyx*, and of the *Teſta Conchylii*, and of the *Unguis odoratus*, Dioſcorides doth ſpeak in his ſecond book. In Germany there are two kinds of *Alabaſter* found, which are nominally diſtinguiſhed from the places in which they are found. The firſt of theſe kinds is called *Alabaſtrites Cherſcus*, as being found in *Cheruſcia* not farre from *Northuſia*. The ſecond kind of theſe *Alabaſters* is called *Saxonicus*, as being found in *Saxony* about *Hildelſhem.*

Of the places.

This ſtone is found in a Countrey called *Alabaſtria* in Egypt. It is alſo found in *Damaſcus* of *Syria*, and in *Northuſia*, and in *Saxony*, and about the Egyptian *Thebes*; in *Carmania*, in *India*, in *Aſia*, and in *Cappadocia*; in *Arabia* and *Italy*. In *England*

is

is found very beautifull *Alabaſter*. There are many pieces of this ſtone to be found and digged up in the Colledge yard of Henry the ſixth, called the Chappel yard in the Univerſity of Cambridge.

Its vertue.

Dioſcorides ſaith of this ſtone, that it is endued with a diſcuſſive power, eſpecially if it be calcined. The like doth Mathiolus alſo ſpeak of this ſtone. They likewiſe ſay that the powder of it, artificially mixt *inſtar Cerati vel Unguenti* with other fit matter, and artificially applyed to the ſtomach, doth diſcuſſe the cauſe of its hardneſſe, aſſwage its pains, and mitigate its dolours and griefs. Galen doth highly commend the powder of this ſtone to be taken in drink for this purpoſe.

A ſcruple of the powder of this ſtone if it be drunk in milk, is ſaid to be good againſt dyſenteries & fluxes of the belly; in theſe caſes it may help by its aſtringency, for it is ſaid that it is very aſtringent and for this cauſe it is alſo taken to be very good in *Collyriis*, or in ophthalmick medicines which externally are uſed for the repreſſing of involuntary tears, and watery fluxes of the eyes, as doth appear by what Mathiolus and Dioſcorides ſpeak of it.

Of its uſe.

This ſtone made into *pixes* and boxes, or convenient veſſels, is of excellent uſe to keep pretious unguents from rancour and corruption, and to preſerve coſtly oyls from waſting. Of its aptneſſe for this uſe Pliny *l.* 36. *c.* 7, *&* 8. doth write; and other

things concerning it, *l.* 13. *c.* 13. The known uſe of this ſtone is in the ornament of ſtately edifices. It hath been uſed in imagery, for the framing and forming out of it, the ſhrines of Saints; and for the erecting of Tombes and Monuments, and Memorials for the preſervation of the memory of the dead, and to make their names live when their ſpirits have left the world, and their bodies are returned to the duſt and ſcattered into unknown places. The common uſe of this ſtone in theſe our dayes is in veſſels, either for eating or drinking, many of which veſſels of excellent beauty, I have ſeen brought to the fair near Cambridge (a famous Univerſity in England) called Stirrebridge fair, and there ſold at very reaſonable rates. Theſe veſſels are very commendable for their beauty, and very fit for uſe, as being ſomewhat tenacious, and therefore not broken eaſily and without violence.

CHAP. LXX.

Of the black, brown, and blue Marbles.

Deſcription of the ſtone.

THe black *Marble* is a ſtone of a large magnitude, and hard, in the form and thickneſſe of barres of wood ſharpened at one end; which being formed and framed by art, and poliſht, is made fit for many noble ends and uſes.

Of its names.

This cannot well be called *marmaros*, becauſe it being throughly black, cannot be capable of that reſplendency, which the white *marble*, and the *Porphyrie*,

rie, and the other beautifull *marbles* of light colours are endued withall. This *marble* is called *Luculleum*, from *Lucullus* the Conſul, who brought it firſt to Rome from the iſland of Nilus. So ſaith Boetius, *pag.* 245.

It is alſo called *Obſidianus lapis* from *Obſidius*, who firſt found it in *Ethiopia*. The Italians call it the *Paragone*, and that becauſe of its uſe: for with it they examine gold in ſtead of the *lapis Lydius*. In French *Pierre d' touche*. In Germane *Probeirſtein*. In Engliſh *The black marble*.

Of the places.

This ſtone is found in the North of *Ireland* towards *Gallowey*; alſo in *Belgia*, and in *France*.

Rulandus ſpeaketh of ſeven kinds of this *marble*.

1. *Marmor nigrum Belgicum*, or the Belgick black Marble. 2. *Annebergicum*, or the Annebergiſh Marble. 3. *Ratisbonenſe*, or the Ratisbonian Marble. 4. *Belgicum*, or the Belgick Marble, which he ſaith hath the ſmell of Sulphur. 5. A black Marble, which ſmelleth like burned or calcined horn. 6. *Marmor Andegavenſe*, which is a very black poliſht Marble, and is found not far from that citie. 7. A black Marble called *Stolpenſe* of an iron colour and hardneſſe. This Marble Agricola calleth *Biſalten*: and Rulandus *Buſalten*. In Dutch, *Stolpiſcher-ſtein*. The name *Baſaltes* by which this Marble is called, cometh of the *Ethiopian* word *Baſall*, which ſignifieth iron. And this ſtone (ſaith Boetius) is of the colour of iron, and may be exactly poliſht. Boetius ſaith that this ſtone is found in *Ethiopia*, and

in diverse parts of *Germany*; in *Silesia*, and in the coasts of *Bohemia:* and that it groweth in the mines where it is found in the form and thickness of barrs of wood sharpened at one end.

Of its use.

The black Marble is used for the examination of gold and silver, and hence of some it is called *Basanus*, *à Basanizo*, which signifieth *to examine diligently*: which name is proper to the *lapis Index*, or *Lydius*; and that for its use of examination of gold and silver. Its common use is in pavements and tombes. The tombe of that illustrious Prince, Duke *Maurice* the Electour, was made of this Marble, saith Rulandus.

CHAP. LXXI.

Of the Lapis Lydius, or the Touch-stone.

THe *lapis Lydius* is a kind of black Marble, it admitteth of a very good and perfect politure; and if it be a very good *lapis Lydius* indeed, you can scarce have no sooner breathed upon it, but straightway the cloud of your breath will flie from its superficies, and presently be discussed.

Its names.

This stone in Greek is called Βάσανος à Βασανίζω, which signifieth *to examine diligently:* hence also in Latine it is called *lapis Index*, because by examination it sheweth gold to be gold, and silver to be silver; and also other metalls what they are. It is called *lapis Lydius*, from the countrey of *Lydia*, from whence it is brought. In French *une pierre de touche*. In Germane

mane *ein Probier ſtein.* It is found in the ſame places where the black Marble is.

Its uſe.

It is uſed in the examining of metalls; and it may be uſed to the ſame purpoſes with the black Marbles. In Italy they have a greeniſh ſtone, which they call *Veridello*, which they uſe for examination, even as they do the *Lydius*.

CHAP. LXXII.

Of the Green Marble.

THe green Marble is of ſome taken to be that which the Italians call *Veridello*. This Marble is ſometimes found ſpecked with cleare ſpecks like a ſerpent, and for this cauſe it is called of Albertus Magnus the *Serpentine Marble*.

Its kinds.

Rulandus ſpeaketh of three kinds of this green Marble. 1. *Laconicum viride marmor*, or a Laconick green Marble, which may be ſeen at Venice. 2. *Subviride Veronenſe*, ſhining with bright green ſpots. 3. A Laconick Marble which is blackiſh in a green.

The place.

The green Marbles are found in *Lacedæmonia*. The uſe of theſe ſtones is in ornament. This ſtone may be ſeen in *Florence*, in the Temple of S. *John Baptiſt*. Cardanus *lib. de lapid.* ſaith, that he hath ſeen many columnes, or pillars, and tables of this ſtone.

CHAP. LXXIII.

Of the Ophites of the Ancients, or the Serpentine Marble.

Description of the stone.

THe *Serpentine Marble* is by some taken for an *Alabaster*, distinguisht with spots like a Serpent. It is often found of divers colours.

Its names.

This Marble is called *Zeblicum*, and ὄφις *ab* ὄφις, *serpens*, as saith Dioscorides, *lib.* 5. *cap.* 154. hence the name *Ophites*. By the Germanes *Serpentin stein*. In English the *Serpentine Marble*.

Its vertues.

Galen. l. 9. de simpl. med. facult. saith that this stone hath a detersive facultie, and that if it be taken in white wine, it is good to break the stone in the bladder. It is of a cold nature, and may therefore mitigate pains, as saith Dioscorides. It is said of this by Plinie and Dioscorides, that if it be worn, it will secure the person wearing it, from stingings of serpents, from phrensies, and lethargies, and from plagues, pox, and poysonings, and the like. To this purpose also Cardane in his book *de lapid.* doth speak of the *Zeblicum Marmor* which is found in *Misnia*. Of the various coloured Marble called *Ophites*, Cardane saith that Andr. Alciatus had a fair table of great beauty: and that naturally there are shapes and personages found in these various coloured Marbles: and sometimes in the *Lapis Parius*. Of this admirable workmanship of nature Cardane saith there

there is a Marble in the Temple of *Wisdome at Constantinople, which hath in it the image of S. John Baptist, with his garment of camels hair very exquisite in all things. *Cardan. de subtilitat. l. 7. p. 377.*

* *in ædc sapientiæ.*

CHAP. LXXIIII.

Of the Phengites or yellow Marble.

THe *Marmor Phengiticum* is a Marble that hath yellowish transparent veins, saith Boetius. Rulandus saith that it is a yellow pellucid Marble; and most likely so, or else it could never discover so much glory in the dark as is reported of it: For Cardanus saith, that it shineth exceedingly, and giveth the *species* of images. For this cause Nero finisht the temple of Fortune; as it were inwardly of the splendour of a golden house, which was a building that Servius Tullius first began, and called it *Sejam*. This house (saith Cardane) was so finisht by Nero in its internall structure with this kind of Marble which receiveth the light; as that the doores being all shut, so much light was reserved within, as that a day-light claritie and splendour was there to be seen.

Its names.

This Marble is called *Phengiticum*, and *Marmor flavum*; in English, *the yellow Marble.*

Its kinds.

Rulandus speaketh of two kinds of it: 1. *Marmor flavum*, which is found amongst metalls, and called in Germane *ein gelver spot.* 2. A yellow Belgick Marble which is not pellucid.

Places.

The places.

This kind of Marble Plinie saith is found in *Cappadocia:* it is also found in *Belgia.*

CHAP. LXXV.

Of the brown or gray Marbles.

THe gray Marble is a hard stone of a cleare superficies, well known to all. It is called *Marmor cinereum*, and *cinereum Hildesheimium.*

There are six kinds of this Marble according to Rulandus. 1. *Marmor cinereum Hildesheimium*, which smelleth like burnt horn. 2. *Marmor Zeblicium*, which the inhabitants call *a serpentine marble*, with veins and white points. 3. The third kind is also called *Zeblicium*, to which or in which are generated *Carbuncles*, that in a polisht Marble give a very pleasant aspect, and a wonderfull representation. 4. *Marmor Rochlicianum* with yellow specks. 5. *Rochlicium* with black specks, like to the claws of crows. 6. *Italicum*, or an Italian one, with black specks, like serpents. Cardanus saith concerning the colours of Marbles, *Nullus color marmori concessus non est.*

The blue Marbles are of the kinds of *Porphyry*, of which in the next Chapter.

CHAP. LXXVI.

Of the Porphyrites or Porphyrie, or of the Marmor rubrum, or red Marble.

THe *Porphyrite* is a red *Marble*, of very excellent hardnes, and of a beautifull splendour. An-

Anſelmus Boetius ſaith that of all the kinds of red *Marbles*, the *Porphyry* is the beſt for ſplendour and hardneſſe.

At Millain before the altar of S. Ambroſe temple, (Cardanus in his book *de Lapidibus* ſaith) there are two notable pillars of excellent *Porphyry* to be ſeen: And that in the ſame place there was a very fair tombe of *B. Dionyſius*, of *Porphyrie*, for magnitude as large as a mans body, and of no ſmall thickneſſe, which was tranſlated from the temple of S. Ambroſe to a larger temple of the ſame citie of Millain.

Its adulteration.

It is no hard matter for thoſe artificers that are skilled in the ſophiſtications of this kind, and in an exquiſite imitation of nature in the making of factitious ſtones, to adulterate the *Porphyrie*, for ſuch artiſts as theſe, who are the imitatours of nature, know what matter will be pureſt and moſt exactly compacted together for this purpoſe; they know what tinctures will beſt fit for the production of the beauty of the *Porphyrie*, and how to mix theſe tinctures ſo, as that their artificiall ſtone ſhall emulate in beauty the beſt red *Marble*, or *Porphyrie* of the excellenteſt beauty; for the matter of the adulteration of this ſtone, how ſuch matter may be brought to the perfection of a ſtone by art, will appear by what hath been ſpoken concerning the China cups in the chapter of the *Onyx*, and concerning the artificiall tinctures of gemms in other chapters of this our lapidary. Alabaſter and fat earth well mixt will

raise a fit matter for this purpose, to which a convenient tincture being added, it will produce the artificiall beauty of a very excellent *Porphyrie.*

Of its names.

In Hebrew it is called בהט as Esther 1. 6. In Greek it is called Πορφυείτης from Πορφυείζω which signifieth *sum purpureus, vel in purpuram vergo.* So *Dioscorides l.* 3. *c.* 44. In Latine it is called *Porphyrites & Marmor rubrum.* If it have any white specks, Pliny calleth it *Leucostictos.* The best *Porphyry* is by Martinus Rulandus, from its native soil called *Ægyptium Uniforme*; and for the same cause it is in Germane called *ein schoner roter Marmor auß Egypten.* In English we call it the *Porphyrite,* and the red *Marble.* Divers other names it hath from the places of its birth, from the soyl where it groweth, and from its mixture and variety of beautifull colours, as will appear in the severall distinctions of its *species* by its severall colours, and severall places where it groweth, and is found, and from whence it is brought.

Its kinds.

The *Porphyry* or red *Marble,* is found of divers kinds saith Rulandus. Rulandus speaketh of eight kinds of this stone, which is called *Marmor rubrum,* or *Porphyrites.*

The first kind he saith is *Marmor rubrum Ægyptium uniforme,* or *Porphyrites uniformis,* that is, a *Porphyrite* full of uniformity, and every way like it self, of one entire beauty arising from its pleasing red,

red, which is uncompounded, and not at all intermixt with any variety of other colours, this is that excellenteſt or beſt red *Marble* or *Porphyrite*, which is ſingularly hard, full of ſplendour, and more beautifull then all the other kinds, as having no darkneſſe admixt with the ſplendour of its redneſſe; nor cloudineſſe or obſcureneſſe ſhaddowing of it.

The ſecond kind Rulandus calleth *Marmor Ægyptium rubrum*, or *Porphyrites ruber candidis punctis diſtinctus*; that is, the red *Marble* of Egypt, or the *Porphyry* diſtinguiſhed with white ſpots.

The third kind he calleth *Marmor rubrum Ratisbonenſe*, or *Porphyrites Ratisbonenſis*, this is ſo called from *Ratisbone* the place where it is found.

The fourth kind he calleth *Rutilans Marmor Ratisbonenſe cum candidis maculis*, that is, the red Ratisbonian *Marble* with white ſpots.

The fifth kind he calleth *Marmor nigrum in rubro Bohemicum*, or *Porphyrites ruber Bohemicus*, ſo called from the place where it is found.

The ſixth kind he calleth *Marmor in rubro candidum Belgicum*, or *Porphyrites in rubro candidus Belgicus variis maculis diſtinctus*, that is, the Belgick *Porphyrite* which is white in a red, and diſtinguiſhed with divers ſpots.

The ſeventh kind he calleth *Marmor Annebergicum*, or *Porphyrites Annebergicus in metallis repertus*; that is, the *Annebergick Porphyrite* found in metals.

The eighth kind he calleth *Marmor rubrum in candido, in metallis ferè omnibus repertum*; that is, the *Marble* or *Porphyrite* which is red in a white, and is found ſaith Rulandus, in, or amongſt almoſt all metals.

Cardanus speaketh of but two kinds of the *Porphyrite*, the one distinguished with red and white spots, the other he saith is a red *Marble* distinguished with shining spots.

Anselmus Boetius speaketh of these kinds of the *Porphyrite*.

1. A *Porphyrite* red and full of splendour, excellency, and beauty, of which before.

2. A *Porphyrite* which is blue or of a violet colour, and is found about the Gregorian mount in the field of S^t^ Pisans in France.

3. A Theban *Porphyrite* of a red colour with golden spots.

4. A white *Marble* with red veins which is called *Lunense*. And this truly if it be excellent and well polished, is of admirable and excellent beauty, and very gratefull to the eye.

The place.

It is found in *Egypt*, in *Belgium*, in *Bohemia*, in *Ratisbone*, and in divers places of *France*, *Germany*, and *Italy*, and at *Anneberge*, and about *Thebes*.

Of its dignity and use.

It is of dignity for its beauty; of use for ornament of Princely and stately Palaces and Temples; it is also used for sepulchres, and as rich and costly tables.

CHAP.

CHAP. LXXVII.

Of common ſtones which are vulgarly known, and to be found in moſt places.

THe ſtones commonly known and found in moſt places, are generated of a more impure matter (for the moſt part) then are the afore-mentioned ſtones. Theſe ſtones which are ſo well known to all men, are diſtinguiſht amongſt themſelves; either in reſpect of their magnitude, as ſome of them are greater, and ſome of them leſſe; or in reſpect of their conſiſtency; or in reſpect of their qualities; or in reſpect of their uſe. As concerning the magnitude of theſe ſtones, ſome of them are very large, and hewn out of main rocks of the ſame nature with themſelves; of this kind are free-ſtones, grind-ſtones, whet-ſtones: and others of them are very ſmall, and are found in every field, in every high-way, and in every ſtreet, of this ſort are the pebble-ſtones, flints, and pyrites. As concerning the conſiſtencie of theſe ſtones, or the matter of which they are generated, ſome of them have their originall of a gravelly matter; others of a ſlimie or muddie ſubſtance; which according to the various operations that nature hath upon it, produceth ſtones either of a ſmooth ſuperficies, or full of ſcales, nodoſe and full of knots. As concerning their qualities, ſome of them are liquable or eaſily molten, as ſome kinds of the ſofter flints: others of them have a ſtrong ſavour, as the *Lapis Aldenburgicus*: and ſome of them are eaſily burned, as the *Lime-ſtone*. As concerning

their uſe, ſome of them from their uſe are called *Whet-ſtones*, ſome *Lime-ſtones*, ſome *grind-ſtones*, others *free-ſtones*.

CHAP. LXXVIII.

Of the Saxum Arenarium, or the Gravell-ſtone.

THe common ſtones of great Magnitude vulgarly known are firſt the *ſaxum Arenarium*, or the gravell ſtone. The gravell ſtone, is a ſtone commonly known, generated of a ſandy ſubſtance, concrete together into a maſſe of a very great and wonderfull magnitude.

Of its kinds.

Theſe ſtones (according to Boetius) are of three kinds. 1. A rough gravell ſtone, which is generated of the groſſer part of ſand, and is ſo firmly compacted, as that it is not eaſily levigated; the roughneſſe of its groſſe, ſandy ſubſtance, maketh this ſtone unfit for levigation; but its well-compactedneſſe maketh it very fit for building.

2. A gravell ſtone compacted of the ſmalleſt ſand, mixt with interſplendent ſilver ſpangles. But this is ſo ſoft as that it may eaſily be rubbed to pieces with the fingers. This ſtone is found neare *Prague*.

3. A gravell ſtone which is ſometimes of a yellowiſh colour, ſometimes of a red colour mixt with ſplendent golden ſpangles, and at other times onely red. There are of theſe kinds of ſtones alſo of an aſhy colour, and of a blackiſh colour in a red. The gravell

gravell ſtones are very heavie and weighty, and for the moſt part they do conſiſt of divers mixtures: for ſome of them are found in their ſubſtance to be mixt with a multitude of ſmall flints, others with ſmall ſhells, and other little bodies.

Rulandus ſpeaketh of five kinds of this ſtone.

1. *Pirnenſe ſaxum Arenarium*, which in Germane is called *Weißer Pirniſcher Sandſtein.* 2. *Luteum Fribergium.* 3. *Rubrum Rochlicium.* 4. *Cinereum Querfurdium.* 5. *Saxum Arenarium Nigrum in Rubro*, of *Embecca* in *Saxonie.*

CHAP. LXXIX.

Of the Cruſteous ſtones, or ſtones that have ſcales.

THe cruſteous and ſcaly ſtones which nature doth generate of a divers matter, are of colour ſometimes gray, ſometimes whitiſh, ſometimes of a greeniſh gray, ſometimes blue, ſometimes red, ſometimes black, and ſometimes yellowiſh, and of ſo ſoft a ſubſtance, as that they are fit for very little uſe, ſave onely that in the countreys where they are commonly found, they are uſed for the covering of houſes, and for the making of forms to caſt bullets in.

Their names.

In Latine theſe ſtones are called *lapides ſquamoſi & cruſtoſi.* Id Germane *Schiferſtein:* in Belgick they are called *Shnilgen:* in French, *Eſcailles:* In Franconia they are called *Waſſer ſteinen*, as being in thoſe parts found in the water. *Anſ. Boet. p.* 254.

CHAP.

CHAP. LXXX.

Of the Limosus, limous, mud, or slime-stone.

THe *lapis limosus* is so called, because it is easily dissolved. This seemeth to be but the *initium* or beginning of a stone. These stones for their pinguositie and fatnesse are used to manure and make land fertile withall.

CHAP. LXXXI.

Of the Tophous or knotty stones called Tophi Nodosi lapides.

THe *lapides Tophi* and *nodosi* are like to the *lapis Parius*, or white Marble in candour and hardnesse. Some of these are found black, and some of them of a red earthy colour. They have the levity of a *Pumice*, and are so soft as that they may be sawed in pieces like wood. These stones are called in Greek τόφοι and πόροι, in Latine, *Tophi*, and *Nodosi*, and *Pori*. These stones are used in buildings, and they are (saith Boetius) very fit for this purpose, because by reason of their porositie, they do with great facilitie entertain and imbibe the lime, and do therefore the better agglutinate the extremities of the walls to themselves.

CHAP. LXXXII.

Of the Calx viva or lime stone.

THe Lime-stone or *calx viva* is a stone of a white colour, of which is made a very commodious

dious matter for building. It is ſometimes found of a browniſh colour. It is every where obvious, and its uſe is well known to all.

It being put in water, doth by a ſudden motion of a contrarietie of qualities which is betwixt its ſelf and the water, produce a great heat. Plinie ſaith this ſtone is of a burning facultie, and hath diſcuſſive power with it, and that it is good againſt ulcers. Galen *9. Simpl.* ſaith it is good to produce an Eſchare withall; but being quencht or ſlakt (he ſaith) it looſeth theſe faculties.

Rulandus ſpeaketh of two kinds of it, *viz.* one of a white colour, and another of a sky-colour; both which he ſaith, have a burning faculty with them; and that both do naturally hate water, and are inflamed by it; but love oyl ſo, as that they will very eaſily mix themſelves with it. *Vide Serap. de Calce. l. aggreg. c. Horach.*

CHAP. LXXXIII.

Of the lapis Molaris, or the Mil-ſtone.

THeſe ſtones are ſo common and well known to every man, that I ſhall not need to ſpeak any thing, either concerning them or their uſe. Onely this, they are called רחים in Hebrew *ab odore perpetuo farinæ*, ſo ſaith Buxtorff. Thoſe kinds of Mill-ſtones which the Hebrews call רחים, were wont to be plied and followed by the hands of captives, who ſtanding behind them, did thruſt them with their hands, and the ſtrength of their whole bodies, in a very ſervile labour which they were compelled to; hence it is ſaid Exod. 11. 15. אשר אחר הרחים, *hoc eſt, qui eſt poſt molas.*

CHAP. LXXXIV.

Of the Cos or Whet-stone.

THe ordinary Whetstones are well known to all men by their common use. Cardanus saith that *Cos* is a kind of *Lapis Lydius*: and if it be very good, fit for the triall of mettall, whether gold, or silver, or other mettalls.

CHAP. LXXXV.

Of the common stones of lesser magnitude which are vulgarly known.

THe common stones well known to all, are generated some of a more impure earth, others of a more pure. Those that are generated of an impure earth, are of a rough superficies, full of scales and porous: these are soft, and for the most part of a brown colour, yet there are to be found of these stones of all manner of colours. These stones are usually found in fields, and upon the banks of rivers. The softer sort of these kind of common stones, are wont to be melted to poure upon mettalls, to keep them from evaporating.

CHAP. LXXXVI.

Lapides bene vel malè olentes; of stones of smell and savour.

THe stones that have savour are of the kinds of small stones. The savour that they have is sometimes

times good and pleaſing, and ſometimes evil and diſpleaſing. Anſelmus Boetius ſaith, that he had ſome of the kinds of ſmall ſtones that ſmelt like violets: which were ſome of them of a white colour, and others of a browniſh colour. But concerning the originall of the ſavours and ſweet ſmells in theſe ſtones, upon better conſideration, he ſaith, that the ſmell did not proceed from the ſtones, but from the greeniſh ſlime that did adhere to them; which ſlime being taken away, the ſmell alſo vaniſht. *Boet. p.* 258.

All theſe kinds of common ſoft ſtones, do for the moſt part, partake of the ſavour of thoſe things that grow neare to them.

CHAP. LXXXVII.

Of common ſtones vulgarly known which are generated of a more pure earth.

THe common ſmall ſtones which are generated of a more pure earth, are of a ſmooth ſuperficies, and void of ſcales, roughneſſe, and knottineſſe; theſe are found ſo excellent oft-times, as that they being cut and poliſhed, emulate *Marbles* for beauty, nay *Diamonds*; In-ſomuch as ſome of them for the glory of their ſparkling rayes, are eſteemed valuable with ordinary *Diamonds*, and ſold at the rate and price of them. Of theſe kinds of ſtones which are vulgarly known, is the *Marchaſite*, and the *Silex*. Of which in the following chapters.

CHAP. LXXXVIII.

Of the Pyrites, Fire-stone or Marchasite.

Description of the stone.

THe *Pyrite, Marchasite* or *Fire-stone*, is a soft clear stone and bright, out of which fire is easily excust. If you break one of them, and rub the two parts of it together in a dark and shady place, you shall see many sparkles of fire proceed from it; as oft I have experienced in our English *Pyrites* or *Marchasites*.

Of its names.

Dioscorid. l. 5. c. 135.

It is called in Greek Πυρίτης λίθος, & Μαρχασίτα. In Latine *Pyrites lapis, Pyrimachus, Marchasita, Lapis luminis, Pyrsotocus, Lapis ærarius scatens rubro sulphure, & scintillas ex chalybe multas excutiens.* In Germane *ein kieß hat veil rots schwefels, kupfferstein, & kupffer erß.* In English the *Fire-stone*, or *Marchasite*, or the mine of brasse.

The kinds of it.

Of the *Pyrites* there are some of a silver colour, and some of a golden colour; the best are those out of which the fire is easily excust. Of the *Pyrites* there are many kinds, and so many as that I will not now speak of them all; but rather deferre that (according to the successe of this first fruits of our labours) for an addition. So many are the species of this stone, as there are kinds of metalls; but I omit them: Onely this, Dioscorides saith of the best of the species, that it is like unto brasse, and that brasse is made of it.

The

The place.

It is found in *Arabia*, and from thence cometh its name of *Marchaſite*, and in *Germanie*, in *Greece*, and in *England*.

Of its uſe.

It is hot and dry of quality, & fit for the diſcuſſion of humours, and for this purpoſe it is uſed in phyſick. Dioſcorides ſaith, they are fit to beget fire in any dry or fungous matter, becauſe of the abundance of fire that they yield. They are uſually calcined for phyſick uſe. By Tartar water there may ſulphur be extracted out of them.

CHAP. LXXXIX.

Of the Silex or Flint.

THe *Silex* or *Flint* is a ſtone harder then the *Marble*, and very difficult to be engraven: extrinſecally it is commonly grayiſh, without angles and ſmooth; intrinſecally it is firmly compacted, and without pores; for the moſt part it is obſcure or black within. This ſtone will very well ſaith Boetius ſupply the place of the *Lapis Lydius* or *Touch-ſtone*. *Deſcription of the ſtone.*

Its names.

In Hebrew it is called חלמיש (*hoc eſt*) *Silex vel petra duriſſima*, ſometimes *nomen* צור is joyned with it *ad ωξηνον* or to ſtrengthen its ſignification, as *Deut.* 8. 15. מצור החלמיש (that is) *è rupe petræ, hoc*

hoc est è rupe durissima, vel è rupe ex ipso saxo. And again Deut. 32. 13. מחלמיש צור that is, *de petra rupis.* In Greek χάλιξ. Of Thucydides the flints are called χάχλακες. In Latine *Silex* and *Chalix.* In Germane *ein Kyßling*, or *oder Kyßelstein*; and *ein Tewerstein.* In English the *Flint* or *Pibble-stone.*

Its kinds.

There are divers kinds of this stone saith Boetius some of which are red, some white, some yellow, some green, some of mixt colours.

Rulandus speaketh of three principall kinds of this stone, which are subdivided into many kinds, as

1. Of various coloured *Flints.*
2. Of non-pellucid *Flints.*
3. Of pellucid *Flints.*

The pellucid ones, white ones, or translucide ones, which are one and the same kind, may be molten: these are those stones which Aristotle calleth *Prismachas.* Those that use to melt mettals, may poure these upon their melted mettals, that they may swim over them, and so hinder the evaporating of their metall.

Of the place.

The *Flints* are found in *Noremberge*; In *Germany*; In *Saxony*; In the river of *Trebisa*; In *England*; and indeed in all stony places almost every where.

Their dignity value and use.

For dignity and value; the translucide and diaphanous ones, are for their beauty, of esteem and worth;

worth; theſe by jewellers are engraven and ſold for Bohemian *Diamonds*; factitious beautifull ſtones are by artiſts many times framed of theſe, and of theſe may be made excellent glaſſes.

The *Flints* are altogether unmeet for building, becauſe they will not imbibe the lime.

They are commonly of uſe to procure fire by, and this they do very eaſily by reaſon of the abundance of ſparks which they yield, and which is excuſt from them by percuſſion.

Oftentimes theſe ſtones are found beautified with Perſonages, and many other pretty ſportings of nature in her workmanſhip, which are very delightfull, of which more at large we may hereafter have an occaſion to ſpeak.

In the mean while,

Δόξα τῷ Θεῷ, *Cujus poteſtate freti, huic operi primitiarum noſtri laboris finem poſuimus.*

FINIS.